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Very truly Yrs
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A
MANUAL
OF
NORTH AMERICAN BIRDS.

BY

ROBERT RIDGWAY.

ILLUSTRATED BY 464 OUTLINE DRAWINGS OF THE GENERIC CHARACTERS.

SECOND EDITION.

PHILADELPHIA:
J. B. LIPPINCOTT COMPANY.
1896.

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PREFACE TO THE SECOND EDITION.

During the eight years which have passed since the first edition of this work was published the number of active ornithologists in the United States has greatly increased, and through their united research in the exploration of new or imperfectly worked fields and the careful revision of particular genera our knowledge of North American birds has been materially extended, thus rendering a new and carefully revised edition extremely desirable. It is well known that few, if any, books are quite free from typographical and other errors, due to various exigencies, avoidable and otherwise. Such imperfections of the first edition have been located, largely by friends and correspondents who have detected them in their practical use of the book, and have all, so far as they have been discovered, been corrected.

Of the ninety-one species and subspecies which have been added to the North American fauna since 1887, twelve were fortunately included in the analytical "keys," and it has therefore been necessary in their case only to change the typography of the names and prefix the catalogue number of the American Ornithologists' Union's "Check List of North American Birds." The remainder are given in regular order in the Appendix (pages 583–614), marginal reference numbers in the body of the work at once directing attention to the supplementary matter.

Some complaint has been made that in the original edition no directions were given for using the "keys." This omission was not an oversight, such directions being deemed unnecessary because it was supposed the plan of the keys was so simple as to be self-explanatory.

For those who are already familiar with the use of analytical keys in works on natural history such instructions would of course be quite superfluous; but as some who possess the book may not have had previous experience with such "keys," the following directions are given for their benefit:

In the first place, it may be stated that the principle upon which the keys are constructed is that of dichotomous antithesis. That is, each character tested must conform to one or another phrase, there being only one alternative. Therefore, if the characters mentioned after a^1 do not fit the bird in hand, everything following must be ignored until a^2 is reached. Having found that the bird belongs to a^1 or a^2, as the case may be, then the immediately following b^1 is to be tested, and so on until the ultimate division is reached and the bird identified.

The method may be more fully explained by selecting some particular species for identification; and for better illustration we will select one belonging to a mainly extralimital family, and therefore less familiar to the student of North American birds. The bird is from the State of Tamaulipas, Mexico, somewhat resembles a medium-sized, thick-set flycatcher, but is evidently not a member of the *Tyrannidæ*. We will suppose that the person is a beginner, and does not even know the Order to which the bird belongs. In this case it is necessary to commence with the "Key to the Higher Groups," on page 1, which begins as follows: "a^1. Hind toe connected by web or membrane with the inner toe."

The bird in hand has the hind toe quite free from the inner toe; therefore it must be sought for under "a^2. Hind toe, if present, not connected with inner toe," in regard to which character it agrees. Then b^1 must be tested. "b^1" says, "Nostrils tubular and feet webbed." It has not tubular nostrils nor webbed feet, and therefore it must belong to b^2, which says, "Nostrils not tubular, or else feet not webbed," both of which alternatives fit the bird in question. Proceeding to "c^1. Cutting-edges of bill more or less distinctly fringed or dentate; feet webbed," it is at once seen that this will not do; "c^2. Cutting-edges of bill not fringed nor dentate, or else feet not webbed," will do, however. It cannot belong to "d^1," because the legs are not "inserted far behind the middle of the body," etc., but it agrees all right with "d^2." The anterior toes are not webbed; therefore it cannot belong to "e^1," and search must be continued under "e^2." "f^1" will not do, for the thighs are not naked; therefore "g^1," "g^2," "h^1," and "h^2," which follow successively, must be passed over, and "f^2" tried, which, being done, is found to agree. "g^1" will not answer, because the bill is not hooked, etc.; therefore it must come under "g^2." This being determined, it is found that, "h^1" being inapplicable, "h^2" fits. Then, the bill being "without a swollen cere," it must come under "i^2." It is next found that the wings are "not very long and gape not very wide . . . and tail-feathers 12 in number;" the toes are not "only 2 in front," etc.; therefore it must be beyond "k^1." "k^2" is then tried, and found to fit; the bird is identified as a member of the Order Passeres, and the reader referred to page 321 in order to determine the family to which it belongs. Turning to page 321, as directed, it is found that the tarsus is cylindrical, etc. (a^1), and that the inner toe has the "basal phalanx united to that of the middle toe" (b^2); therefore the bird belongs to the Family Cotingidæ, which is further treated on page 323, where the genera are analyzed. Seeking here for the genus, we find that, as the nostrils are not "wholly exposed," it must belong under "a^2." The tip of the bill being only "very slightly hooked," it must belong to "b^1," and the tail being "graduated for only about half the length of the exposed culmen," etc., it must belong to the Genus Platypsaris, treated further on page 324. Comparison of the bird with the condensed description of generic coloration under the heading of "common characters" removes all possible doubt as to its being a member of this genus; therefore it remains only to determine the species, for which the key proves quite adequate. The bird fits exactly the characters ascribed to "adult females and young males" under "a^1." An apparent difficulty or "hitch" is now met, for the diagnostic characters of the different species are very obvious only in the adult males. A careful consultation of the characters of the adult female and young male following "c^1," "c^2," and "b^2," in connection with the length of the culmen and the known locality, results, however, in the final determination of the species as PLATYPSARIS AGLAIÆ (Lafr.). ROSE-THROATED BECARD.

The measurements of eggs have been revised with the assistance of Major Bendire, the corrections made being based upon the measurement of a much larger number of specimens than were measured before.

ROBERT RIDGWAY.

UNITED STATES NATIONAL MUSEUM,
September 20, 1895.

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INTRODUCTION.

In Classification, Nomenclature, and Numeration the present work corresponds strictly with the "Check List of North American Birds" published by the American Ornithologists' Union,[1] which represents the joint labors of a "Committee on Classification and Nomenclature" appointed by the Union during its first Congress, held in New York City, September 26–29, 1883.

During the year which has elapsed since the publication of the A. O. U. Check List several species have been added to the North American fauna, while others have been for the first time described. These are of course included in the present work, being interpolated in their proper places.[2] At the same time, it has been considered desirable, in the interest of the student of North American Ornithology, to include, for reasons stated farther on,[3] certain extralimital species from contiguous countries. All such additional species have, however, been carefully distinguished typographically, in order that no confusion may arise, the method of discrimination being as follows:

(1) All species which are undoubtedly North American, even though of doubtful validity, are in larger type, those given in the A. O. U. Check List proper being numbered as in that list, while eighteen of the twenty-six species composing the so-called "Hypothetical List,"[4] and also those subsequently added to the fauna, are preceded by a dash (—) instead of a number. (2) All species which have not been established as North American (the majority never having been claimed as such) are printed in smaller type, and have neither a number nor a dash.

The Geographical Limits are also, so far as numbered species are concerned, those of the A. O. U. Check List; but practically these limits have been enlarged so as to include all the species known to inhabit Socorro Island, off the coast of northwestern Mexico, which is decidedly *Nearctic*, or North American, in its zoölogical affinities, while in many cases other extralimital species have been included, for the sake of comparison and also on account of the greater or less probability of their occurrence within the southern boundary of the United States. In most cases this ignoring of geographical limits has been confined to the inclusion of only the Mexican,[1] Cuban, and Bahaman species of characteristically North American genera, or of genera from the same regions belonging to North American Families, the European analogues of certain North American species, and species of northeastern Asia which have been ascribed to Alaska, or which may from the close proximity of their habitat be expected to occur there. A notable departure from this general rule has, however, been made in the Order *Tubinares*, consisting wholly of species inhabiting the "high seas," whose more or less erratic or fortuitous wanderings render them specially liable to a place in the list of "accidental visitors" to any sea-girt country, for which reason it has been considered desirable, as an aid to future research, to include all known species belonging to genera of which representatives have been taken in North American waters.

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[1] The Code of Nomenclature | and | Check List | of North American Birds | Adopted by the American Ornithologists' Union | Being the Report of the Committee of the Union on Classification and Nomenclature | (Motto) | —— | New York | American Ornithologists' Union | 1886 | [8vo., pp. i–viii, 1–392.]

[2] For lists of these additional species, see Appendix, pages 591–594.

[3] See under "Geographical Limits."

[4] "Consisting of species which have been recorded as North American, but whose status as North American birds is doubtful, either from lack of positive evidence of their occurrence within the prescribed limits . . . or from absence of satisfactory proof of their validity as species." Of the twenty-six species constituting this list, eighteen are unquestionably North American (one of them having been recently established as such), while the remaining eight have very scant claims to a place in our fauna.

MATERIAL.—Although the unrivalled collection of American birds and their eggs forming part of the National Museum[2] has furnished by far the greater portion of the material upon which this work is based, several other public museums, as well as rich private collections, have been carefully studied. Thus, the American Museum of Natural History, in New York City; the Academy of Natural Sciences of Philadelphia; the Boston Society of Natural History; the Museum of Comparative Zoölogy, in Cambridge, Mass.; and the splendid private collections of Messrs. George N. Lawrence, of New York City, William Brewster, of Cambridge, Mass., and H. W. Henshaw,[3] of Washington, D.C., have furnished indispensable material in the way of extralimital species or more extensive series of certain North American species, for comparison, than had yet been secured by the National Museum. It is not, however, the large number of specimens alone that has furnished the substantial basis of the following synoptical tables; for, however much the proper discrimination of species and subspecies may be a question of material, a great deal depends upon our knowledge of the birds in life, their natural surroundings, and other things which can be learned only out of doors. Fortunately, a very large number of accomplished field-naturalists have carefully observed the habits of our birds, and through their published records have together contributed a vast store of information which no single person could himself have gained. To the much that has been gleaned from this source have been added the author's field-notes, collected during the period extending from a recent date back to the year 1863, and embracing many measurements of fresh specimens, notes on location of nests, fresh colors of bill, eyes, feet, etc., and various other useful memoranda.

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[1] Under the head of "Mexican" are included not only Mexico itself, but also Guatemala and Honduras. (See page vii, regarding typographical distinction between extralimital and North American species.)

[2] The total number of specimens of American birds in the National Museum collection at the end of June, 1886, was about 36,000, exclusive of duplicates and mounted specimens; the North American "study series" of *Passeres* and "*Picariæ*" (*i.e.*, *Macrochires*, *Pici*, and *Coccyges*) alone aggregating nearly 13,000, counting only those obtained from North America proper, as defined in the A. O. U. Check List. At the same time, the collection of North American birds' eggs numbered 38,400 specimens, constituting by far the most extensive and valuable one in existence. Even before the addition of the magnificent private collection so generously donated by Captain Charles E. Bendire, U.S.A., no other was comparable to it, either in the number of species represented or in their careful identification, it having from the commencement been made a rule to destroy all specimens regarding which there appeared the least doubt or suspicion. Captain Bendire's celebrated collection, while representing fewer species, included far more extensive series of a large number of species, showing extreme variations of size, contour, and coloration, all perfectly identified, while it was wholly unique in the exquisite preparation of the specimens.

[3] Special mention should be made of Mr. Henshaw's valuable collection (embracing more than 7000 specimens and unusually complete series of many species), which through the owner's courtesy has been constantly accessible to the author.

MEASUREMENTS are in English inches and hundredths, except when otherwise stated.[1] Whenever practicable, they have been taken from large series of specimens, and the extremes given, as well as the average, which follows in parenthesis. Thus, 5.75–6.50 (6.12) would indicate the minimum, maximum, and average, respectively, of the measurements taken. In the case of closely-allied forms, or where distinctive characters are largely a matter of dimensions or the proportionate measurements of different parts, care has been taken to measure, whenever possible, an equal number of specimens of the several forms to be compared; and specimens in abraded or otherwise imperfect plumage, as well as young birds, have been excluded. When there is any marked sexual difference in size, the number of males and females measured of allied forms has also been made as nearly equal as possible. *Length* is to be understood as meaning the total length (from end of bill to tip of tail) of the fresh specimen, before skinning, unless otherwise stated. This measurement is the least important of any for the purpose of determination of the species, being of any value at all only when taken from the fresh specimen, before skinning, and even then subject to much variation, according to the amount of stretching to which the bird is subjected. In a very large number of species the author's measurements from freshly-killed specimens are given, but in perhaps a majority of cases it has been necessary to take measurements made by others. Owing to the fact that all our leading authorities have been consulted on this point and only the extremes given, it has been found impracticable (even if desirable) to distinguish the latter from the former, but it may be remarked that nearly all of those in which the range of variation between the extremes is very great belong to the latter category. *Length of wing* is from the "bend," or carpal joint, to tip of longest primary, the rule being laid along the outer or convex side and the wing brought up close to it for its entire length. *Length of tail* is from tip of longest feathers to their apparent base, a point often very difficult to determine, and subject to more or less variation according to the method of preparing the skin, the amount of shrinkage to which the flesh at the base of the tail has been subjected, etc. *Length of culmen* is the chord of the curve, measured with dividers, from the tip of the upper mandible to the *extreme base* of the culmen (this often more or less concealed by feathers of the forehead)—unless the qualifying word "exposed" is prefixed, in which case the measurement is similarly made to where the frontal feathers close over the base of the culmen. *Depth of bill* is also measured with dividers, and is a measurement requiring extreme care. *Length of tarsus* is measured with dividers, one point resting in the tibio-tarsal joint, on the outer side, the other on the lower edge of lowermost tarsal scutella, in front (in Passerine and certain Picarian and Raptorial birds), or to the more or less obvious transverse depression marking the line of separation between tarsus and base of middle toe (in most water birds and some others). *Length of middle toe* is always measured with dividers from the last-mentioned point to the base of the claw, on top, and not including the claw, unless so stated.

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[1] See foot-note on page xii., as to conversion of inches and decimals into millimetres.

Measurements of eggs represent the average of six specimens (more or less, according to the extent of the series available for the purpose) which represent or approximate the average size and form as nearly as could be determined by the eye alone.

THE NAMES OF COLORS used in the diagnoses are adopted from the author's "Nomenclature of Colors,"[1] in which may be found an elaborate though concise treatise on the subject, designed especially for the uses of the naturalist, and in which 186 colors, embracing all that are named in descriptive ornithology, are depicted, by hand-colored plates.

ILLUSTRATIONS.—With the exception of those which have already appeared in the *Review of American Birds*,[2] *History of North American Birds*,[3] and *Water Birds of North America*,[4] the illustrations have been made specially for the present work by Mr. John L. Ridgway, under the author's supervision, and engraved by the celebrated "Jewett" process of Messrs. Matthews, Northrupp & Co., of Buffalo, N.Y.

ACKNOWLEDGMENTS are specially due to Professor Baird, not only for the privilege of consulting specimens and books so essential to the preparation of this work, but also for the friendly advice and valuable suggestions which have rendered comparatively easy the performance of a task which under less favorable auspices would have been far more difficult of accomplishment. For valuable aid, always most cordially rendered, the author is much indebted to Dr. Leonhard Stejneger, whose well-known thorough bibliographical knowledge and excellent judgment have greatly facilitated the settlement of many vexatious questions of synonymy and difficult problems of relationship. To the authorities of the several public museums and the owners of the private collections already mentioned, the author is glad to have this opportunity of publicly expressing his sense of obligation for many courtesies, including, besides unrestricted access to the collections in question, the loan of valuable and unique type specimens.

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[1] A | Nomenclature of Colors | for Naturalists, | and | Compendium of Useful Knowledge | for Ornithologists. | By | Robert Ridgway, | Curator, Department of Birds, United States National Museum. | With ten colored plates and seven plates | of outline illustrations. | Boston : | Little, Brown, and Company. | 1887. |

[In this work is also embodied a "Glossary of terms used in descriptive ornithology," in which references are given to all the plates. The latter include, besides those representing the colors, three showing the external anatomy or "topography" of a bird, with special reference to the names used in descriptions, one illustrating various egg-contours, one showing a comparative scale of standard measurements, and two upon which are depicted the various forms or patterns of feather-markings. There is also, among other things useful to the naturalist, a series of tables for the easy conversion of inches and decimals into millimetres, and *vice versa*.]

[2] Smithsonian Miscellaneous Collections. | —181— | Review | of American Birds, in the Museum of the | Smithsonian Institution. | By | S. F. Baird. | —Part I. North and Middle America. | —[Medallion.] Washington : | Smithsonian Institution. |

One volume, 8vo; date of publication (by signatures), June, 1864, to June, 1866.

[3] A | History | of | North American Birds | by | S. F. Baird, T. M. Brewer, and R. Ridgway | Land Birds | Illustrated by 64 colored plates and 593 woodcuts | Volume I [—III]. [Vignette.] | Boston | Little, Brown, and Company | 1874. |

[This is the most recent work on North American ornithology, giving, besides technical descriptions, synonymy, etc., a general account of the history and habits of each species, as known up to date of publication. The size is small 4to, and the total number of pages nearly 1800.]

[4] Memoirs of the Museum of Comparative Zoölogy at Harvard College, Vols. XII. and XIII. The Water Birds of North America. By S. F. Baird, T. M. Brewer, and R. Ridgway. Issued in continuation of the publications of the California Geological Survey. J. D. Whitney, State Geologist. Boston. Little, Brown, and Company, 1884.

[Two volumes, uniform in general style, typography, etc., with the "History of North American Birds," and in reality the conclusion of that work. Total number of pages 1104, embellished by numerous wood-cuts.]

R. R.

NORTH AMERICAN BIRDS.

KEY TO THE HIGHER GROUPS.

a^1. Hind toe connected by web or membrane with the inner toe. Order **Steganopodes.** (Page 73.)

a^2. Hind toe, if present, not connected with inner toe.

b^1. Nostrils tubular and feet webbed............... Order **Tubinares.** (Page 50.)

b^2. Nostrils not tubular, or else feet not webbed.

c^1. Cutting-edges of bill more or less distinctly fringed or dentate; feet webbed.

d^1. Legs short, or but slightly lengthened; bill not abruptly bent downward from the middle......... Order **Anseres.** (Page 84.)

d^2. Legs excessively lengthened; bill bent abruptly downward from the middle..................... Order **Odontoglossæ.** (Page 121.)

c^2. Cutting-edges of bill not fringed nor dentate, or else feet not webbed.

d^1. Legs inserted far behind the middle of the body, which in standing position is more or less erect, the toes webbed or conspicuously lobed.................................. Order **Pygopodes.** (Page 4.)

d^2. Legs inserted near the middle of the body, which in standing position is nearly horizontal, or else toes not webbed.

e^1. Anterior toes distinctly webbed, and tarsus shorter than tail. Order **Longipennes.** (Page 20.)

e^2. Anterior toes not distinctly webbed, or else tarsus decidedly longer than tail, or else bill extremely small, with gape very broad and deeply cleft.

f^1. Lower portion of thighs naked; or else bill lengthened and grooved along each side, the outer and middle toes separated for their entire length, and with three toes in front.

g^1. Hind toe long and inserted at nearly same level with anterior toes, the claws never excessively lengthened; loral or orbital regions, or both (sometimes whole head), naked. Order **Herodiones.** (Page 122.)

g^2. Hind toe (if present) short and inserted above the level of the rest, or else size small or medium (never as much as 3 feet long); loral and orbital regions fully feathered, and middle claw with edge not pectinated.

h^1. If more than 3 feet long, the hind toe decidedly elevated; if under 3 feet long, the hind toe on same level with anterior toes.

Order **Paludicolæ.** (Page 134.)

h^2. Never over 3 feet long (usually much less), the hind toe (if present) short and elevated, or else the claws excessively lengthened and wings spurred.

Order **Limicolæ.** (Page 143.)

f^2. Lower portion of thighs feathered (or else middle and outer toes united for at least half their length), the bill if lengthened not grooved along the side.[1]

g^1. Bill strongly hooked, with a distinct naked cere at base of upper mandible; or if no naked cere, the toes 2 in front and 2 behind.

h^1. Toes 3 in front, or else outer toe reversible.

Order **Raptores.** (Page 218.)

h^2. Toes 2 in front, 2 behind (outer toe permanently reversed)....... Order **Psittaci.** (Page 268.)

g^2. Bill not strongly hooked, and without naked cere at base of upper mandible; or if with a cere, the latter swollen and the bill straight.

h^1. Hind toe small and elevated, or else bill without soft swollen cere.

Order **Gallinæ.** (Page 184.)

h^2. Hind toe (or toes) well developed and on same level with anterior toes.

i^1. Bill with soft swollen cere at base of upper mandible. Order **Columbæ.** (Page 210.)

i^2. Bill without soft swollen cere.

j^1. Wings very long, with 10 primaries, tail of 10 feathers, and gape very wide and deeply cleft, or else bill long and slender, tongue extensile, and secondaries only 6 in number.

Order **Macrochires.** (Page 297.)

j^2. Wings not very long and gape not very wide nor deeply cleft, or else wing

---

[1] Or else toes 2 in front and 2 behind, and tail-feathers stiff-pointed (Order *Pici*).

with only 9 primaries and tail-feathers 12 in number.

*k*¹. Toes only 2 in front, or if 3, the middle and outer toes connected for at least half their length.

*l*¹. Tail-feathers stiff and more or less pointed, and bill more or less chisel-like.

Order **Pici.** (Page 280.)

*l*². Tail-feathers neither stiff nor pointed, and bill not chisel-like.

Order **Coccyges.** (Page 271.)

*k*². Toes 3 in front, 1 behind, the middle and outer toes not united for half their length, lower part of thighs feathered, and tarsus equal to or longer than lateral toes.

Order **Passeres.** (Page 321.)

ORDER **PYGOPODES.**—THE DIVING BIRDS.

(Page 1)

Families.

a^1. Tail-feathers wanting.
  Anterior toes lobed, the nails very broad, flat, and with rounded tips. (Suborder *Podicipedes*).. **Podicipidæ.** (Page 4.)
a^2. Tail-feathers present, but short. (Suborder *Ceppհi.*)
  b^1. Hind toe present.. **Urinatoridæ.** (Page 6.)
  b^2. Hind toe absent.. **Alcidæ.** (Page 8.)

FAMILY **PODICIPIDÆ.**—THE GREBES. (Page 4.)

Nest a thick matted platform of rushes, sedges, etc., usually floating upon the surface of the water in grassy or sedgy ponds or marshes. *Eggs* 2–5, dull white, bluish white, or very pale bluish green, usually stained more or less (often quite deeply) with light brown, by contact with decomposed vegetable matter.

Genera.

a^1. Bill slender, the length of the culmen much more than twice the depth at the base.
  b^1. Length of culmen five or more times as much as greatest depth of the bill; neck nearly as long as the body................ **Æchmophorus.** (Page 4.)
  b^2. Length of culmen less than four times as much as greatest depth of the bill; neck much shorter than the body.................... **Colymbus.** (Page 5.)
a^2. Bill very stout, the length of the culmen less than twice as much as the greatest depth of the bill.. **Podilymbus.** (Page 6.)

GENUS **ÆCHMOPHORUS** COUES. (Page 4, pl. I., fig. 1.)

Species.

COMMON CHARACTERS.—Pileum and cervix slaty black; rest of upper parts slaty, inner webs of remiges chiefly white; entire lower parts, including lower half of head and all of neck except stripe down the cervix, pure satiny white. *Downy young:* Above uniform brownish gray, lighter anteriorly; lower parts uniform white.

a^1. Length 24.00–29.00 inches; wing 7.45–8.50 (average 8.07); culmen 2.60–3.05 (2.78). *Eggs* 2–5, 2.40 × 1.54. *Hab.* Western North America (chiefly the interior) from Mexico and Lower California to Manitoba.
1. **Æ. occidentalis** (LAWR.). **Western Grebe.**

a^2. Length about 22.00 inches; wing 6.70–7.75 (7.31); culmen 2.10–2.48 (2.25). *Eggs* 2–5, 2.16×1.41. *Hab.* Western North America, chiefly along Pacific coast.................................. —. **Æ. clarkii** (LAWR.). **Clark's Grebe.** (1.)

GENUS **COLYMBUS** LINNÆUS. (Page 4, pl. I., figs. 2, 3.)

Species.

a^1. Wing 5.00 inches or more.

b^1. Bill about as long as the head. Wing more than 6.00 inches. (Subgenus *Colymbus.*)

c^1. Feathers of lower parts pure white to the extreme base. *Nuptial plumage:* Throat and chin buffy white, passing posteriorly into rich ferruginous on the very prominent auricular frill, which is tipped with black; top of head and elongated tufts on each side of occiput glossy black. Length 22.00–24.00; wing 6.80–7.75; culmen 1.75–2.30. *Hab.* Nearly cosmopolitan, but no authentic record for any portion of America.

C. cristatus LINN. **Crested Grebe.**[1]

c^2. Feathers of lower parts white only superficially, the concealed portion being distinctly grayish. *Nuptial plumage:* Top of head dull black, somewhat glossy; rest of head ash-gray, bordered above and posteriorly by whitish; neck rufous.

d^1. Length about 17.50; wing 6.45–7.00 (6.63); culmen 1.50–1.55 (1.53). *Hab.* Northern portions of eastern hemisphere.

C. grisegena BODD. **Red-necked Grebe.**[2]

d^2. Length 18.00–20.50; wing 7.30–8.10 (7.65); culmen 1.65–2.40 (2.02). *Eggs* 2–5, 2.23 × 1.37. *Hab.* North America, including Greenland, breeding far northward; eastern Asia.

2. **C. holbœllii** (REINH.). **Holbœll's Grebe.**

b^2. Bill much shorter than head. Wing not more than 6.00 inches. (Subgenus *Dytes* KAUP.)

c^1. Bill compressed (deeper than wide) at base. *Nuptial plumage:* Lower neck and chest rufous; sides of occiput with a very full dense tuft of soft, blended, ochraceous feathers. *Downy young:* Whole top of head dusky; sides of head whitish with two stripes and several irregular spots of dusky; a dusky streak on each side of throat; upper parts plain dusky grayish. Length 12.50–15.25; wing about 5.75. *Eggs* 2–7, 1.78 × 1.20. *Hab.* Northern portion of northern hemisphere, breeding in America chiefly north of the United States..................... 3. **C. auritus** LINN. **Horned Grebe.**

c^2. Bill depressed (wider than deep) at base. *Nuptial plumage:* Head, neck, and chest black; sides of head, behind eyes, with a tuft-like or somewhat fan-shaped loose patch of slender ochraceous feathers. *Downy young:* Top of head dusky, with several white markings, the middle of the crown with a small naked, reddish space; no dusky streak on side of throat, or elsewhere below level of eyes. Length 12.00–14.00; wing 5.20–5.50.

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[1] *Colymbus cristatus* LINN., S.N. ed. 10, 1758, 135.

[2] *Colymbus grisegena* BODD., Tabl. P. E. 1783, 55.

d^1. Three or four inner quills mostly or entirely white. *Hab.* Central Europe and Asia.

C. nigricollis (Brehm). **Eared Grebe.**[1]

d^2. Inner quills with inner webs wholly dusky. Colors generally duller and bill more slender. *Eggs* 4–8, 1.75 × 1.19. *Hab.* Western North America, north to Great Slave Lake, south to Guatemala, east to Mississippi Valley.

4. **C. nigricollis californicus** (Heerm.). **American Eared Grebe.**

a^2. Wing less than 5.00 inches. (Subgenus *Podiceps* Lath.)

Tarsus decidedly shorter than middle toe without claw. *Nuptial plumage:* Top of head dull greenish black; rest of head dark gray or dull plumbeous, the chin and throat dull black. *Downy young:* Top of head black, with a rufous spot in middle of crown, and various white markings; sides and underparts of head and neck white varied with black lines. Length 9.00–10.50; wing 4.00. *Eggs* 1.35 × .94. *Hab.* Tropical America in general, north to southern Texas and Lower California.

5. **C. dominicus** Linn. **St. Domingo Grebe.**

Genus PODILYMBUS Lesson. (Page 4, pl. I., fig. 5.)

Species.

Brownish above, silvery white beneath, the feathers dark grayish basally. *Nuptial plumage:* Chin, throat, and anterior portion of malar region black; rest of head and neck brownish gray, darker above; lower parts spotted with dusky; bill whitish, crossed about the middle by a black band. *Winter plumage:* Black throat, etc., of nuptial plumage replaced by dull whitish, the rest of the head browner; lower parts without dusky spots; bill brownish (paler on lower mandible) without black band. *Young:* Similar to winter adult, but sides of head more or less distinctly striped with brown. *Downy young:* Head and neck distinctly striped with white and black, the crown with a rufous spot; a rufous spot on upper part of nape and on each side of occiput; upper parts blackish, marked with four strips of grayish white. Length 12.00–15.00; wing 4.50–5.00. *Eggs* 4–5, 1.72 × 1.99. *Hab.* The whole of America, except extreme northern and southern districts.

6. **P. podiceps** (Linn.). **Pied-billed Grebe.**

FAMILY URINATORIDÆ.—THE LOONS. (Page 4.)

Genus.

(Characters same as those given for the family).......... **Urinator.** (Page 7.)

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[1] *Podiceps nigricollis* Brehm, Vög. Deutschl., 1831, 963. *Colymbus nigricollis* Stejn., Auk, ii., Oct. 1885, 340.

GENUS **URINATOR** CUVIER. (Page 6, pl. II., fig. 1.)

Species.

COMMON CHARACTERS.—Above blackish or slaty, beneath white. *In summer*, upper parts spotted or speckled with white, the throat and fore-neck blackish or chestnut. *In winter*, and in *young*, upper parts without white markings, and throat and fore-neck white like rest of lower parts. *Downy young* uniform sooty grayish, the belly white. *Nest* built on ground at edge of marsh or lake. *Eggs* 2, elongate-ovate, deep brown or olive, rather sparsely speckled or spotted with dark brown and blackish.

a^1. Tarsus shorter than inner toe with claw; fore-neck blackish in summer.

- b^1. Distance from base of culmen to anterior point of loral feathers, above nostrils, greater than the distance from the latter point to anterior border of nostrils. *Summer plumage* with head and neck black all round, the middle of the fore-neck and sides of lower neck each crossed by a bar or transverse series of white streaks.
  - c^1. Basal depth of bill[1] not less than one-third exposed culmen; bill in adult blackish (almost wholly deep black in summer); head and neck glossed with velvety green; white spots on scapulars broad as long; length 28.00–36.00; wing 13.00–15.25 (14.06); culmen 2.75–3.50 (3.07); depth of bill through base .90–1.05 (.96). *Eggs* 3.52 × 2.27. *Hab.* Northern part of northern hemisphere, breeding from northern United States northward..... 7. **U. imber** (GUNN). **Loon.**
  - c^2. Basal depth of bill less than one-third exposed culmen; bill in adult whitish (almost wholly yellowish white in summer); head and neck glossed with velvety violet-blue; white spots on scapulars decidedly longer than broad; length about 35.00–38.00; wing 14.85–15.45 (15.11); culmen 3.50–3.65 (3.59); depth of bill through base 1.00–1.20 (1.09). *Hab.* Western Arctic America and northeastern Asia .... 8. **U. adamsii** (GRAY). **Yellow-billed Loon.**
- b^2. Distance from base of culmen to anterior point of loral feathers, not greater than distance from the latter point to anterior extremity of nostril. *Summer plumage* with upper part of head and hind part of neck grayish; throat and fore-neck black, without white streaks, but several longitudinal series of the latter down the side of the neck, between the black and the gray.
  - c^1. Fore-neck and under side of neck glossed with velvety purple; occiput and hind-neck deep gray, almost plumbeous. Length 26.00–29.00; wing 12.15–13.20 (12.55); culmen 2.50–2.85 (2.60); depth of bill at base, .75–.80 (.78). *Eggs* 3.09 × 1.96. *Hab.* Northern portions of northern hemisphere, breeding in Arctic regions; in North America, south, in winter, to extreme northern United States, east of the Rocky Mountains.
    9. **U. arcticus** (LINN.). **Black-throated Loon.**

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[1] At base of exposed culmen.

c^2. Fore-neck and under side of head glossed with dull bronzy greenish, sometimes inclining to purplish; occiput and hind-neck very pale smoky grayish, sometimes nearly white. Wing 11.20–12.25 (11.54); culmen 2.00–2.35 (2.15); depth of bill at base .55–.65 (.62). *Eggs* 3.11 × 1.92. *Hab.* Pacific coast of North America, from Alaska to Lower California, breeding far northward.

10. **U. pacificus** (LAWR.). **Pacific Loon.**

a^2. Tarsus longer than inner toe with claw. Fore-neck rich chestnut in summer; head and neck plumbeous gray, the top of head and hind-neck streaked with white; upper parts speckled with white. *Summer plumage:* Throat and fore-neck plumbeous, like rest of head and neck, but marked down the middle with a wedge-shaped patch or stripe of rich chestnut. *Winter plumage* and *young:* Throat and fore-neck white. *Downy young:* Above uniform dusky, or sooty slate; lower parts paler and more grayish. Length 24.00–27.00; wing 10.00–11.50; culmen 2.25; tarsus 2.75. *Eggs* 2.82 × 1.76. *Hab.* Northern portions of northern hemisphere, breeding in Arctic regions; in North America, south, in winter, nearly across the United States.

11. **U. lumme** (GUNN.). **Red-throated Loon.**

FAMILY ALCIDÆ.—THE AUKS. (Page 4.)

Nest a cavity among rocks, usually on face of cliffs. *Egg* single, variable as to form and color.

Genera.

a^1. Inner claw much larger and more strongly curved than the others; corner of mouth with a thick naked skin, or "rosette;" bill excessively compressed, nearly as deep as long, the terminal portion transversely grooved (except in young), the basal portion with several accessory deciduous pieces, cast at end of breeding season. (Subfamily *Fraterculinæ.*)

b^1. Basal outline of permanent (terminal) portion of upper mandible convex; lower mandible wholly destitute of grooves, in all stages; grooves of upper mandible with concave side toward tip of bill. *Nuptial ornaments:* Deciduous nasal shield or saddle widest toward culmen, where forming an arched and much thickened ridge; eyelids without horny appendages; on each side of head a large pendent tuft of lengthened, silky, straw-colored feathers .... **Lunda.** (Page 10.)

b^2. Basal outline of permanent (terminal) portion of bill concave, or nearly straight and very oblique; permanent (terminal) portion of lower mandible grooved (except in young); grooves of the upper mandible with concave side toward base of the bill. *Nuptial ornaments:* Deciduous nasal shield widest toward nostril; basal outline of upper mandible concave; eyelids furnished with horny appendages; head without ornamental tufts or plumes .... **Fratercula.** (Page 11.)

a^2. Inner claw not obviously different in size or shape from the others; corner of mouth without thickened naked skin or "rosette."

b^1. Angle of chin much nearer to nostril than to tip of bill.

c^1. Nostrils exposed, overhung by a more or less distinct horny scale, and feathers of lores never reaching to anterior end of nostrils; secondaries without white tips. (Subfamily *Phalerinæ.*)

d^1. Gonys occupying more than half the total length of the lower mandible, or else tip of upper mandible not abruptly decurved from a long, straight culmen.

e^1. Distance from anterior border of nasal hollow to nearest loral feathers equal to one half or more than one half the distance from the same point to the tip of the bill. (*Phalereæ.*)

f^1. Bill about as long as the head (culmen about 1.00); wing more than 6.50.................. **Cerorhinca.** (Page 11.)

f^2. Bill much shorter than head (culmen less than .75); wing less than 6.50.

g^1. Upper mandible broader than deep at base; culmen nearly straight. (Wing about 5.00.) **Ptychoramphus.** (Page 12.)

g^2. Upper mandible higher than broad at base; culmen decidedly curved.

h^1. Lower mandible very narrow, strongly and very regularly recurved, the tip acute; edge of upper mandible very regularly convex. (Wing 5.25–6.00.)...... **Cyclorrhynchus.** (Page 12.)

h^2. Lower mandible more than half as deep as the upper, not recurved, or else tip not acute; upper mandible with edge nearly straight or else not regularly convex. (Wing 5.25 or less.).............. **Simorhynchus.** (Page 12.)

e^2. Distance from anterior border of nasal hollow to nearest loral feathers equal to not more than one-fourth the distance from the same point to the tip of the bill. (*Brachyrampheæ.*)

f^1. Tarsi scutellate in front, much longer than the horny portion of the commissure. **Synthliboramphus.** (Page 13.)

f^2. Tarsi reticulate in front, not longer than horny portion of commissure............... **Brachyramphus.** (Page 14.)

d^2. Gonys occupying less than half the total length of the lower mandible; culmen straight to near the tip, where abruptly decurved. (*Cepphеæ.*)

Loral feathers forming an acute angle. (Wing 6.50–7.50; culmen 1.00 or more.).................. **Cepphus.** (Page 16.)

c^2. Nostrils completely concealed or enclosed within a dense, velvety feathering, which extends from the lores to or beyond their anterior end; secondaries sharply tipped with white. (Subfamily *Alcinæ.*)

*d*¹. Bill narrow, the culmen slightly or gently curved, both mandibles destitute of grooves; tail rounded, the feathers not pointed. (*Uriaeæ.*)... **Uria.** (Page 17.)

*d*². Bill very deep, much compressed, culmen strongly curved, and one or both mandibles transversely or obliquely grooved (except in young); tail graduated, the feathers pointed. (*Alceæ.*)

*e*¹. Size medium (culmen less than 1.50); bill much shorter than head, the lower mandible with not more than two grooves, or none; wings well developed, admitting of sustained flight. **Alca.** (Page 18.)

*e*². Size very large (culmen more than 3.00); bill as long as the head, the lower mandible with numerous grooves; wings rudimentary, not admitting of flight.. **Plautus.** (Page 19.)

*b*². Angle of chin much nearer tip of bill than to nostril. (Subfamily *Allinæ.*) Bill very short and broad, the culmen much curved; size very small (wing less than 5.00); secondaries sharply tipped with white. **Alle.**[1] (Page 19.)

GENUS **LUNDA** PALLAS. (Page 8, pl. III., fig. 1.)

Species.

Above uniform sooty black, lower parts sooty grayish, the feathers of breast and belly grayish white beneath the surface, this color sometimes showing through, and breaking the continuity of the dusky. *Nuptial plumage:* Anterior portion of side of head white; springing from each side of the crown, immediately above the eye, a thick pendent tuft of lengthened, silky, straw-colored feathers; terminal half of bill bright red, basal portion olive-yellowish; feet bright scarlet (in life). *Winter plumage:* Side of head wholly dusky, but lighter in region of insertion of the nuptial tufts, which are wholly absent; basal deciduous horny covering of bill replaced by soft, dusky brown skin; feet flesh-color (in life). *Young, first winter:* Similar to winter adult, but upper mandible destitute of grooves, and nuptial tufts present in a rudimentary condition but of a light brownish color; terminal portion of bill inclining to brownish orange-red. *Young, first summer or autumn:* Bill smaller, narrower, and browner in color; nuptial tufts wanting. *Downy young:* Uniform dark sooty grayish, or blackish. Length 14.40–15.60; wing 7.75; culmen 1.30–1.45. *Egg* 2.86 × 1.92, more or less ovate, white (sometimes tinged with pale buffy, pinkish, or brownish), usually more or less marked round larger end with faint spots, splashes or streaks of pale brown, or lavender-gray, or both. *Hab.* Coasts and islands of the North Pacific, from southern California to Alaska, and from Bering's Strait to Japan; accidental in Bay of Fundy and Kennebec River, Maine.. 12. **L. cirrhata** PALL. **Tufted Puffin.**

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[1] *Alle* LINK, Beschr. Nat. Samml. Univ. Rostock, i. 1806, 46 (not p. 17, as given in A. O. U. Check List).

GENUS **FRATERCULA** BRISSON. (Page 8, pl. III., fig. 2.)

Species.

COMMON CHARACTERS.—Upper parts, together with a band across fore-neck, uniform blackish; sides of head grayish or white; lower parts pure white. *Downy young,* uniform sooty blackish, or dark sooty slate, the belly white. *Egg* shaped and colored like that of *Lunda cirrhata.*

a^1. Grooves of the bill very oblique, broad, and distinct, the deciduous basal shields occupying less than the basal half of the bill. *Nuptial plumage:* Chin and whole throat grayish, the sides of the head gray; horny process on upper eyelid short, subconical; length 11.50–13.75.

b^1. Bill and general size smaller: Culmen 1.60–1.90, gonys 1.40–1.50, depth of upper mandible at base .75–.90, of lower, .40–.50. *Egg* 2.46–1.74. *Hab.* Coasts of the North Atlantic, from southern Greenland south, in winter, in North America, to New Jersey, breeding as far south as the Bay of Fundy .... 13. **F. arctica** (LINN.). **Puffin.**

b^2. Bill and general size larger: Culmen 2.00–2.30, gonys 1.40–1.60, depth of upper mandible at base .85–1.00, of lower, .70.–80. *Egg* 2.65–1.82. *Hab.* Coasts and islands of the Arctic Ocean, from Spitzbergen to northern and western Greenland.
13*a*. **F. arctica glacialis** (TEMM.). **Large-billed Puffin.**

a^2. Grooves of the bill nearly vertical, narrow, and rather indistinct; deciduous basal shields occupying much more than the basal half of the bill. *Nuptial plumage:* Whole throat blackish, the chin, only, gray; sides of head white; horny process on upper eyelid elongated, horn-like. *Downy young:* Uniform sooty blackish, the belly, abruptly, white. Length about 12.50–14.00; culmen 2.00–2.25, gonys 1.60–1.70, depth of upper mandible 1.15–1.25, of lower, .70–.80. *Egg* 2.74–1.84. *Hab.* Coasts and islands of the North Pacific, from British Columbia to the Kurile Islands.
14. **F. corniculata** (NAUM.). **Horned Puffin.**

GENUS **CERORHINCA** BONAPARTE. (Page 9, pl. IV., fig. 1.)

Species.

Bill much compressed, longer than deep, the culmen regularly curved, but gonys nearly straight; upper parts uniform dusky; under portion and sides of head and neck, down to the chest, together with sides, smoky plumbeous; rest of lower parts white, usually clouded with smoky gray; a row of narrow, pointed, white feathers along each side of occiput, commencing just above and behind the eye; another row of similar but larger feathers across cheeks, from near corner of mouth. *Nuptial plumage:* Base of upper mandible surmounted by a compressed upright horn, the base of which clasps the mandible as a saddle, down to, and enclosing the nostrils. *Winter plumage:* Similar to nuptial dress, but breast more

uniformly gray, the belly more uniform white, and the horn-like process at base of upper mandible entirely absent. *Young:* Similar to winter adult, but white filamentous feathers of head wanting, and bill smaller and darker in color. *Downy young:* Uniform sooty grayish brown, very similar to corresponding stage of *Lunda cirrhata*, but rather lighter in color and with more slender bill. Length 14.00–15.50, wing 7.25, culmen, from cere, or anterior edge of horn, 1.00. *Egg* 2.70 × 1.82, similar in form, color, etc., to those of *Lunda* and species of *Fratercula*. *Hab.* Coasts and islands of the North Pacific, from Lower California (resident) to Japan.
15. **C. monocerata** (PALL.). **Rhinoceros Auklet.**

GENUS PTYCHORAMPHUS BRANDT. (Page 9, pl. VI., fig. 3.)

Species.

Above uniform slaty blackish, changing gradually into plumbeous on sides of head and neck, throat, and fore-neck; a white spot on lower eyelid; lower parts white, the sides (beneath wings) plumbeous; length 8.00–9.50, wing 4.75–5.25, culmen .75. *Egg* 1.83 × 1.34, ovate, pure white. *Hab.* Pacific coast of North America, from Aleutian Islands to Lower California.
16. **P. aleuticus** (PALL.). **Cassin's Auklet.**

GENUS CYCLORRHYNCHUS KAUP. (Page 9, pl IV., fig. 5.)

Species.

Above uniform blackish slate, beneath white; bill orange-red. *Nuptial plumage:* Throat, fore-neck, and sides dusky; a line of narrow pointed white feathers starting just below the eye, and extending back across the ear-coverts. *Winter plumage:* Similar to summer dress, but throat, fore-neck, and sides partly or entirely white; white feathers behind eyes wanting? *Young* (?): Similar to winter adult, but bill duller red (or inclining to brownish), and entire lower parts, including throat and fore-neck, continuous white;[1] length 9.00–10.40, wing 5.40–6.00, culmen about .60. *Egg* 2.12 × 1.46, clear bluish white. *Hab.* Coasts of the North Pacific from Sitka to the Kurile Islands.... 17. **C. psittaculus** (PALL.). **Paroquet Auklet.**

GENUS SIMORHYNCHUS MERREM. (Page 9, pl. IV., figs. 2 to 4.)

Species.

COMMON CHARACTERS.—Upper parts blackish, the scapulars sometimes mixed with white. Adults with a series of slender, pointed white feathers commencing beneath the eye and extending backward across the ear-coverts. *Eggs* ovate, pure white, sometimes faintly tinged with bluish.

a^1. Wing more than 4.00; adult with a recurved frontal crest; lower parts uniform sooty gray, the belly sometimes whitish; no white on scapulars.

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[1] The seasonal and other changes of plumage in this species are not well understood, and we have not the material with which to determine them. The above may, therefore, be not quite correct in some particulars.

*b*¹. Wing 5.00 or more; *adult in breeding season* with several conspicuous deciduous plates on basal portion of bill, including a roundish or semicircular piece at corner of mouth; no white feathers between bill and eye; belly never whitish. (Subgenus *Simorhynchus.*) *Breeding plumage:* Bill bright orange-red, the tip horn-colored. *Winter plumage:* Bill horn-colored, much smaller, through loss of the deciduous pieces. *Young:* Frontal crest and white feathers beneath eye wanting, or but slightly developed; bill much smaller, dusky brownish. Length 8.50–10.80; wing about 5.25. *Egg* 2.14–1.49. *Hab.* Coasts of the North Pacific from Kadiak, Unalashka, and the Prybilof Islands through the Aleutian chain to Kamtschatka and northern Japan.
18. **S. cristatellus** (Pall.). **Crested Auklet.**

*b*². Wing less than 4.50; *adult in breeding season* without conspicuous deciduous plates on basal portion; belly whitish; a more or less distinct patch of narrow, pointed, white feathers between bill and eye (indistinct or obsolete in young). (Subgenus *Phaleris* Temminck.) *Breeding plumage:* Bill dull purplish red, the tip whitish. *Winter plumage* not materially different. *Young:* Frontal crest and white feathers on sides of head wanting or barely indicated; bill dusky. *Downy young:* Uniform sooty slate, lighter beneath. Length 7.10–8.30, wing 4.10–4.25, culmen .35–.40. *Hab.* Coasts of the North Pacific, from Unalashka through the Aleutian chain to Kamtschatka... 19. **S. pygmæus** (Gmel.). **Whiskered Auklet.**

*a*². Wing not more than 4.00; adult without frontal crest; lower parts white, sometimes blotched with dusky; scapulars with more or less white; base of bill with a small compressed knob on top. (Subgenus *Ciceronia* Reich.) *Breeding plumage:* Lower parts white, more or less spotted or blotched with dusky, this often forming a distinct band across the chest. *Winter plumage:* Lower parts, including sides of neck, entirely white; white ornamental feathers of forehead, etc., usually less developed. *Young:* Similar to winter plumage, but bill smaller, scapulars more extensively white, and white ornamental feathers of forehead, etc., wanting. *Downy young:* Uniform sooty slate, paler and grayer on lower parts. Length 5.50–7.20, wing 3.50–4.00, culmen .35–.40. *Eggs* 1.58 × 1.10. *Hab.* Coasts of the North Pacific, from Japan and southern Alaska to the Aleutian and Prybilof Islands.
20. **S. pusillus** (Pall.). **Least Auklet.**

Genus **SYNTHLIBORAMPHUS** Brandt. (Page 9, pl. VI., fig. 1.)

Species.

Common Characters.—Above plumbeous, beneath white. *Breeding plumage:* Chin and part, or whole, of throat dusky; top of head with a broad white stripe along each side; sides, from neck to flanks, uniform sooty blackish. *Winter plumage:* Whole throat white, the chin plumbeous; no white stripes on top of head; sides and flanks white, striped with slaty.

a^1. Never crested. *Breeding plumage:* Chin, throat, and fore-neck, with top and sides of head, sooty black; sides of neck and a broad stripe along each side of occiput, pure white; white stripes on side of occiput not extending forward of the eye; upper back streaked laterally with white. *Winter plumage:* Whole throat white; stripes on sides of occiput and streaks on upper part of back wanting. Length 9.50–10.80, wing 5.25–5.50, culmen .60. *Egg* 2.42 × 1.55, elongate-ovate, buffy (variable in shade from nearly white to almost an isabella-color), speckled or otherwise marked all over with deep brown and lavender-gray. *Hab.* Coasts of the North Pacific, from Japan and southern Alaska (Sitka) northward...... 21. **S. antiquus** (GMEL.). **Ancient Murrelet.**

a^2. Crested in the breeding season. *Breeding plumage:* Fore part of crown with a loose crest of slender, lengthened feathers slightly curved or nearly straight; upper half of throat velvety plumbeous, with a truncated posterior outline; ear-coverts deep plumbeous; white stripes on sides of top of head extending forward far beyond the eye; upper back not streaked with white. *Winter plumage:* Whole throat and malar region white, the chin, only, plumbeous; no white on top of head, and no crest. *Downy young:* Above brownish gray, the back and rump indistinctly streaked with grayish white; lower parts, including chin, entirely pure white. Length about 9.50–11.00, wing 5.10–5.50. *Hab.* Coasts of the North Pacific, from Japan (and Washington Territory?) northward. (Very doubtfully American.)

(2.) 22. **S. wumizusume** (TEMM.). **Temminck's Murrelet.**

GENUS BRACHYRAMPHUS BRANDT. (Page 9, pl. VI., fig. 2.)

Species.

COMMON CHARACTERS.—Size small (wing less than 5.50); bill small and slender, much shorter than head (not longer than the short tarsus), compressed, and pointed; culmen gently curved, gonys nearly straight; plumage very plain, without ornamental feathers about head at any season.

a^1. Tarsus shorter than middle toe, without claw.

b^1. Exposed culmen about equal to inner toe, without claw; secondaries and outer tail-feathers entirely dusky.

c^1. Culmen .70 or less. *Summer adult:* Above dusky, barred more or less with deep rusty; beneath mixed white and sooty brown, in varying relative proportion. *Winter plumage:* Above slaty, interrupted by a white collar across nape; scapulars mixed with white, and feathers of back, etc., tipped with plumbeous; entire lower parts pure white, the orbital and superciliary regions dusky, like top of head, and outermost feathers of flanks striped with dark grayish. *Young:* Above uniform dusky, with indistinct white collar and scapular patches; lower parts white, transversely mottled with dark sooty; bill much smaller and weaker than in adult. Length 9.50–10.00, wing about 5.00, culmen .60–.70, tarsus .70, middle toe .92–1.00. *Egg*

2.14 × 1.42, ovate, ground-color buffy, speckled or otherwise marked with various shades of brown. *Hab.* Pacific coast of North America, from southern California to western Alaska.

23. **B. marmoratus** (Gmel.). **Marbled Murrelet.**

c^2. Culmen .75. *Summer adult:* Similar to corresponding stage of *B. marmoratus*, but markings of upper parts buffy and dull whitish, instead of deep rusty. Wing 5.50, culmen .75, tarsus .70, middle toe .95. *Hab.* Coasts of northeastern Asia, from Japan to Kamtschatka.

B. perdix (Pall.). **Partridge Murrelet.**[1]

b^2. Exposed culmen not more than two-thirds as long as inner toe without claw; secondaries broadly tipped with white, and outer tail-feathers partly or wholly white.

c^1. Tarsus .60 or more. *Summer adult:* Above plumbeous, thickly marked with irregular, mostly longitudinal, spots of buff; lower parts chiefly white, the chest and sides washed with buff and irregularly spotted and barred with dusky; belly more faintly marked with more regular crescentic bars. *Winter plumage:* Above glossy plumbeous, the back and rump very narrowly and indistinctly barred with white; scapulars chiefly white; sides of head (including lores and superciliary region), a narrow collar round hind-neck, and entire lower parts, pure white, the sides of the breast crossed by a broad band of slate-gray, narrowing toward the middle of the chest. Wing 5.10–5.80, culmen .35–.45, depth of bill at base .20–.22, tarsus .60–.65, middle toe .85–.95. *Hab.* Unalashka, through Aleutian chain to Kamtschatka and northern Japan.

24. **B. kittlitzii** Brandt. **Kittlitz's Murrelet.**

c^2. Tarsus .50. Wing 5.25, culmen .50, tarsus .50. *Summer plumage:* Above grayish brown, head and neck spotted with white; beneath white, waved and spotted with brown. *Hab.* San Blas, western Mexico.

B. brevirostris (Vig.). **Short-billed Murrelet.**[2]

a^2. Tarsus as long as or longer than middle toe without claw.

b^1. Lining of wing white; above plain dark slaty, beneath entirely pure white; length 9.60–10.50, wing 4.50–5.25, culmen .70–.80, tarsus .90–.95, middle toe .85. *Hab.* Southern California to Cape St. Lucas.

25. **B. hypoleucus** Xantus. **Xantus's Murrelet.**

b^2. Lining of wing smoky gray, or slaty; in plumage otherwise like *B. hypoleucus;* length about 10.25, wing 4.60, culmen .78–.80, tarsus .88–.90, middle toe .80–.88. *Egg* 2.03 × 1.40, ovate, ground-color buffy, isabella-color, or fawn-color, thickly sprinkled, speckled, or otherwise marked with dark brown. *Hab.* Lower California (vicinity of Cape St. Lucas).

26. **B. craveri** (Salvad.). **Craveri's Murrelet.**

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[1] *Cepphus perdix* Pallas, Zoog. Rosso-As. ii. 1826, 351, pl. 80. *Brachyramphus perdix* Stejn. Zeitschr. Ges. Orn. iii. 1886, 213, p. 7.

[2] *Uria brevirostris* Vig., Zool. Jour. iv. 1828, 357. Possibly the same as *B. kittlitzii* Brandt.

GENUS **CEPPHUS** PALLAS. (Page 9, pl. II., fig. 3.)

Species.

COMMON CHARACTERS.—*Summer adults* uniform black, with or without white on wings. *Winter specimens* white, varied above (sometimes below also) with black, the wings and tail as in summer. *Young* similar to winter adults, but white of wings varied with dusky, the quills marked at tips with white. Bill black; feet bright red in summer, pinkish in winter. *Egg* varying from ovate to elongate-ovate, greenish white or buffy white, heavily spotted or otherwise conspicuously marked with dark brown and lavender-gray.

*a*¹. A large white patch on outer surface of wing.

*b*¹. Under wing-coverts pure white.

*c*¹. Greater wing-coverts white to the extreme base, sometimes a little dusky along the basal portion of the shafts. *Adult in summer:* Uniform blackish, except a large roundish or oval patch of pure white on the wing, including the greater, middle, and posterior lesser coverts, *these feathers all white to the base;* axillars, under wing-coverts, and basal half, or more, of inner webs of quills, pure white. *Winter plumage:* Wings as in summer; rest of the plumage pure white, the upper parts varied with black. *Young:* Similar to winter plumage, but white wing-patch broken by blackish tips to all the feathers; secondaries and primary coverts marked with white at ends, and lower parts indistinctly barred with dusky. *Downy young:* Uniform sooty blackish, paler and more grayish below. Length about 12.50–13.50, wing 6.25–7.20, culmen 1.00–1.20, gonys .50, depth of bill at nostril .35–.40. *Egg* 2.38 × 1.36. *Hab.* Circumpolar sea-coasts, south in North America, in winter, to New Jersey and Norton Sound, Alaska. (Breeding south to Hudson's Bay and coast of Labrador.) .... 28. **C. mandtii** LICHT. **Mandt's Guillemot.**

*c*². Greater wing-coverts with at least their basal half black, this often showing as a narrow bar beyond tips of middle coverts; plumage otherwise as in *C. mandtii*, and measurements nearly the same, but bill larger and stouter; length 12.00–13.80, culmen 1.20–1.30, gonys .55–.60, depth of bill at nostril .40–.45. *Egg* 2.25 × 1.55. *Hab.* Coasts of northern Europe; also from southern Greenland along Labrador coast and south, in winter, to New Jersey; breeding from Newfoundland and southern Labrador to vicinity of Eastport, Maine (?)........................ 27. **C. grylle** (LINN.). **Black Guillemot.**

*b*². Under wing-coverts smoky gray.

Greater wing-coverts black basally, this increasing in extent toward edge of the wing, where occupying almost the whole extent of the outermost feather, thus producing a broad black "wedge" between the two white areas; plumage otherwise as in *C. grylle*, with similar seasonal changes, etc.; length 13.00–14.00, wing 6.90–7.30, culmen

1.20–1.40, gonys .55–.60, depth of bill at nostril .40–.42. *Egg* 2.41 × 1.64. *Hab.* Coasts of the North Pacific, from southern California to the Aleutian Islands, and across to Kamtschatka and northern Japan.
29. **C. columba** PALL. **Pigeon Guillemot.**

*a*². No white on wings.

*b*¹. A whitish area surrounding the eye; plumage otherwise dark sooty. (Winter plumage and young unknown.) Length about 14.50, wing about 7.75, culmen 1.55–1.70, gonys .75–.80, depth of bill at nostril .50. *Hab.* Coasts of northeastern Asia, from northern Japan to Sea of Okhotsk, Kurile Islands, and Bering Island (accidental ?); Unalashka ? ?
C. carbo PALL. **Sooty Guillemot.**

*b*². No white anywhere, the plumage entirely dark sooty; about the size of *C. carbo*. *Hab.* High north Atlantic (Iceland, Greenland, and west side of Cumberland Gulf). —. **C. motzfeldi** BENICK. **Black-winged Guillemot.**

GENUS **URIA** BRISSON. (Page 10, pl. II., fig. 2.)

Species.

COMMON CHARACTERS.—Culmen as long as or longer than the tarsus; bill much compressed, the gonys more or less concave, and nearly as long as the culmen; cutting-edge of upper mandible notched near tip, its basal portion more or less thickened or swollen; a distinct longitudinal furrow in the feathering behind eyes; upper parts uniform dusky, the secondaries sharply tipped with white; lower parts white. *Summer plumage:* Sides of head and neck, chin, throat, and fore-neck, uniform velvety brown. *Winter plumage:* Chin, throat, fore-neck, and sides of head and neck white, with a dusky stripe behind eye. *Young:* Similar to winter plumage, but no white on side of occiput, and that of fore-neck faintly mottled with dusky; bill smaller. *Downy young:* Head, neck, and upper parts smoky grayish brown, the head and neck finely streaked with dingy whitish; lower parts whitish centrally. *Egg* as large as that of a goose, elongate or ovate pear-shaped, and excessively variable in color, the ground-color varying from white to cream-color, pinkish, pale blue, and yellowish green (the last two colors probably most common), and variegated with variously-formed marks of black and brown.

*a*¹. Depth of bill at angle less than one-third the length of the culmen; top of head and hind-neck smoky brown; basal portion of cutting-edge of upper mandible always dusky or similar in color to rest of the mandible. *Summer plumage:* Sides of head and neck, chin, throat, and fore-neck, velvety smoky grayish brown, sometimes marked with a narrow white postocular line, connected with a white ring around eye.[1] (Length 15.00–18.00.)

*b*¹. Wing 7.75–8.30 (7.99), culmen 1.70–1.90 (1.81), gonys 1.05–1.20 (1.14), depth of bill through angle .50–.60 (.52), tarsus 1.40–1.60 (1.51), middle toe 1.60–1.75 (1.70). *Egg* 3.26 × 1.99. *Hab.* Coasts of the North Atlantic, south, in winter, to New England, on American side; breeding from Nova Scotia northward. .... 30. **U. troile** (Linn.). **Murre.**

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[1] Such specimens constitute the *U. ringvia* BRÜNN., by some authors considered a distinct species, and possibly entitled to such rank. Its proper status is a matter of doubt, and is a fit subject for special investigation. Such specimens are only known from the North Atlantic.

b^2. Wing 7.85–8.80 (8.30), culmen 1.60–2.50 (1.86), gonys 1.15–1.40 (1.27), depth of bill through angle .55–.62 (.57), tarsus 1.35–1.60 (1.50), middle toe 1.65–1.85 (1.74). *Egg* 3.24 × 2.01. *Hab.* Pacific coast of North America, south to southern California.

30*a*. **U. troile californica** (Bryant). **California Murre.**

a^2. Depth of bill at angle more than one-third the length of the culmen; top of head and hind-neck sooty black; basal portion of cutting-edge of upper mandible thickened, and conspicuously light-colored in adult. *Summer plumage:* Sides of head and neck, chin, throat, and fore-neck, velvety snuff-brown. (Length 14.50–18.50.)

b^1. Wing 7.45–8.80 (8.24), culmen 1.40–1.50 (1.45), gonys .75–.90 (.83), depth of bill through angle .52–.58 (.55), tarsus 1.40–1.55 (1.45), middle toe 1.65–1.75 (1.70). *Egg* 3.16 × 2.03. *Hab.* Arctic Ocean and coasts of the North Atlantic, south, in winter, to New Jersey; breeding from Gulf of St. Lawrence northward...... 31. **U. lomvia** (Linn.). **Brünnich's Murre.**

b^2. Wing 8.15–9.25 (8.71), culmen 1.45–1.75 (1.65), gonys .85–1.00 (.92), depth of bill through angle .55–.60 (.58), tarsus 1.45–1.60 (1.51), middle toe 1.70–1.90 (1.81). *Egg* 3.21 × 2.01. *Hab.* Coasts and islands of Bering's Sea, and Aleutian chain, from Kadiak to Kamtschatka.

31*a*. **U. lomvia arra** (Pall.). **Pallas's Murre.**

Genus **ALCA** Linnæus. (Page 10, pl. V., fig. 2.)

Species.

Upper parts uniform black, the secondaries sharply tipped with white; lower parts pure white. *Summer plumage:* Head and neck (except top of head and hind-neck) uniform velvety snuff-brown; a white line from the base of the culmen to the eye; bill black, both mandibles crossed about the middle by a white bar. *Winter adult:* Whole under portion of head, fore-neck, and space behind ear-coverts, white; no white line between bill and eye; bill as in summer, but without basal lamina. *Young:* Similar in plumage to winter adult; but bill smaller, without grooves, and lacking the white bar. *Downy young:* Head, neck, and lower parts plain dull whitish, usually more or less tinged above with brownish buff; back, rump, and flanks varying from pale brownish buff (the down dusky immediately beneath the surface), more decidedly brownish posteriorly, to dark sooty brown; posterior and lateral lower parts more or less tinged with sooty brownish or brownish buff. Length 15.00–18.00, wing 8.00–8.50, tail 3.50, culmen 1.25, greatest depth of bill .90. *Egg* 3.06 × 1.89, ovate or elongate pear-shaped, buffy, buffy whitish, pure white, or white faintly tinted with bluish or greenish, very heavily spotted with dark brown round larger end, and marked with smaller spots elsewhere, of brown and lavender-gray. *Hab.* Coasts of the North Atlantic, south, in winter, to southern New England; breeding from eastern Maine northward.

32. **A. torda** Linn. **Razor-billed Auk.**

GENUS **PLAUTUS** BRÜNNICH. (Page 10, pl. V., fig. 1.)

Species.

Upper parts uniform black, the secondaries sharply tipped with white; lower parts pure white. *Summer plumage:* Chin, throat, fore-neck, and sides of head and neck, velvety dark snuff-brown, or soft blackish brown; a large oval patch of white covering the greater part of the space between bill and eyes; bill black, its grooves whitish. Length about 28.00–30.00, wing 5.75, culmen 3.15–3.50, greatest depth of bill about 1.50. *Egg* (average size) 4.67 × 2.91, pyriform-ovate, pale olive-buffy, variously marked with brown and black. *Hab.* Believed to be now extinct; formerly (previous to 1844), coasts and islands of the North Atlantic, chiefly on the American side; south to Massachusetts Bay, north to the Arctic circle.

33. **P. impennis** (LINN.). **Great Auk.**

GENUS **ALLE** LINK. (Page 10, pl. VI., fig. 4.)

Species.

Head, neck, and upper parts black, the secondaries sharply tipped with white, and scapulars streaked with the same; lower parts white, the flanks striped with dusky. *Summer plumage:* Sides of head and neck, with chin, throat, and chest, uniform dark sooty brown. *Winter adult:* Chin, throat, etc., white, this color extending upward toward occiput; feathers of chest dusky at base only. *Young:* Similar to winter adult, but bill smaller and weaker, and colors duller. *Downy young:* Uniform sooty slate-color, paler or more grayish below. Length 7.25–9.15, wing 4.50–4.75, culmen .50. *Egg* 1.90 × 1.29, ovate, very pale bluish green or greenish white. *Hab.* Arctic Ocean and coasts of the North Atlantic; on the American side south, in winter, to New Jersey; accidental on Detroit River.

34. **A. alle** (LINN.). **Dovekie.**

ORDER **LONGIPENNES.**—THE LONG-WINGED SWIMMERS. (Page 1.)

Families.

*a*¹. Bill with the lower mandible not longer than the upper, and not excessively compressed.

*b*¹. Covering of the upper mandible composed of three distinct pieces—a terminal unguis, or hook, a lateral piece, and a cere-like piece saddled upon the culmen, its edge overhanging the nostril. **Stercorariidæ.** (Page 20.)

*b*². Covering of upper mandible consisting of a single piece, through which the nostrils are pierced.. **Laridæ.** (Page 23.)

*a*². Bill with lower mandible much longer than the upper, both mandibles excessively compressed, like a thin knife-blade, for terminal portion. **Rynchopidæ.** (Page 48.)

FAMILY **STERCORARIIDÆ.**—THE SKUAS AND JAEGERS. (Page 20.)

Genera.

*a*¹. Size large (in bulk equal to the largest gulls), and form robust; depth of bill at base equal to not less than half the length of the upper mandible, measured along the side; tarsus shorter than middle toe with claw; tail short, nearly even, the middle pair of feathers scarcely projecting beyond the rest; color dull brownish, sometimes streaked (never barred) with paler, the base of the primaries with a whitish patch .... **Megalestris.** (Page 20.)

*a*². Size medium or rather small (not exceeding the medium-sized gulls), and form more slender and graceful; depth of bill at base less than half the length of the upper mandible, measured along the side; tarsus decidedly longer than middle toe with claw; middle rectrices in the adult projecting far beyond the rest; color plain slaty or dusky, often varied with white or yellowish, in the adult, dusky barred with paler in young; no white at base of primaries. **Stercorarius.** (Page 21.)

GENUS **MEGALESTRIS** BONAPARTE. (Page 20, pl. VII., fig. 1.)

Species.

COMMON CHARACTERS.—General color nearly uniform grayish brown or sooty, usually indistinctly streaked with light rusty, or cinnamon, especially around neck and on back; quills whitish at base. *Eggs* olive, spotted with brown.

a^1. Axillars and under wing-coverts sooty, with little or no rufous.

b^1. Below grayish brown, with more or less distinct lighter, more cinnamon-colored, spots or dashes on fore-neck and chest. *Adult:* Dull brown, the scapulars, interscapulars, and wing-coverts striped medially with pale cinnamon, the neck streaked with the same; lower parts indistinctly striped with grayish brown and pale cinnamon, the former prevailing (sometimes uniform). Sometimes (in melanistic specimens?) uniform dusky or sooty brown, except white wing-spot. *Young:* Similar to adult, but more distinctly streaked with yellowish, especially on head and neck. *Downy young* (of *M. skua*): Uniform "brownish or cinnamon-gray . . . rather darker in color on the upper parts than on the under surface of the body." (DRESSER.) Length about 22.00, wing 15.75–16.15 (15.91), culmen 2.05–2.10 (2.06), depth of bill at base .80–.88 (.82), tarsus 2.40–2.75 (2.63), middle toe 2.15–2.55 (2.40). *Eggs* 2–3, 2.74 × 1.96, ovate or short-ovate, light brown or olive, rather sparsely blotched and spotted with deep brown. *Hab.* Coasts and islands of North Atlantic, south to Spain and (casually) Massachusetts; California?

35. **M. skua** (BRÜNN.). **Skua.**

b^2. Darker colored, larger, and with stouter bill; under parts uniform dark sooty, the neck however sometimes streaked with yellowish; wing 16.05–16.90 (16.29), culmen 2.20–2.85 (2.38), depth of bill at base .95–1.00 (.98), tarsus 2.70–3.20 (2.95), middle toe 2.55–2.80 (2.67). *Hab.* Antarctic seas, north to Cape of Good Hope and Cape Horn.

M. antarcticus (LESS.). **Antarctic Skua.**[1]

a^2. Axillars and under wing-coverts chiefly deep cinnamon.

Lower parts uniform dull rusty or cinnamon.

M. chilensis (BONAP.). **Chilian Skua.**[2]

GENUS **STERCORARIUS** BRISSON. (Page 20, pl. VII., fig. 2.)

Eggs 2–3, ovate or short-ovate, ground-color varying from pale greenish olive and pale brown to very deep olive, relieved by a greater or less amount of spotting of deep brown, usually mixed with stone-grayish.

Species.

a^1. Culmen 1.45 or more, tarsus 2.00 or more, wing usually more than 13.50; lengthened middle tail-feathers broad and rounded at ends. *Light phase, adult:* Top and sides of head, with upper parts, sooty slate or dusky; rest of head and neck, including nape, together with lower parts, white, the ear-covert region tinged with straw-yellow, and the lower tail-coverts slaty. *Young:* Head, neck, and lower parts dull buff, everywhere barred with dusky; upper parts brownish dusky, the feathers of back, etc., tipped with buff, the rump and upper tail-coverts spotted with same. *Dark phase, adult:* Entirely dark sooty

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[1] *Lestris antarcticus* LESS., Traité Orn. 1831, 616. *Megalestris antarcticus* GOULD, P. Z. S. 1859, 98.

[2] *Lestris antarcticus*, var. b. *chilensis* BONAP., Consp. ii. 1857, 207.

slate, with a plumbeous cast in certain lights. *Young:* Entirely sooty slate, the lower parts more or less barred with buff. [Note.—The above so-called light and dark "phases" represent the normal extremes of coloration. These extremes, which are represented in comparatively a small number of specimens, are connected by every possible intermediate condition of plumage, specimens approximating to the lighter extreme, but differing in having the lower parts (especially chest and sides) and nape more or less barred with dusky, being most numerous.] Length about 20.00–23.00, wing 13.50–14.00, middle tail-feathers 8.00–9.00, culmen 1.45–1.75, tarsus 2.00–2.10, middle toe 1.60–1.75. *Eggs* 2.35 × 1.63. *Hab.* Northern portions of northern hemisphere, along sea-coasts and larger inland waters, breeding far northward; in America, south, in winter, to New Jersey and the Great Lakes.
36. **S. pomarinus** (Temm.). **Pomarine Jaeger.**

a^2. Culmen less than 1.45, tarsus less than 2.00, wing usually less than 13.50; lengthened middle tail-feathers narrow and pointed at ends.

b^1. Length of nasal shield, from base of unguis to frontal feathers, decidedly greater than from the former point to tip of upper mandible. *In freshly-killed or living specimens,* tarsi black, like the feet. *Light phase, adult:* Top of head and lores grayish brown; rest of head, neck, and lower parts white, the lower tail-coverts grayish, the head and neck tinged with straw-yellow; upper parts uniform slaty. *Young:* Head and neck streaked with dusky and buffy, the latter usually predominating; lower parts barred or spotted with the same; upper parts dusky, the feathers bordered terminally with pale fulvous or buff. *Dark phase, adult:* Entire plumage uniform sooty slate-color, the quills darker. *Young:* Prevailingly dark brownish slate, wings and tail darker, the middle of neck, all round, indistinctly streaked with whitish, and lower parts, except chest and upper breast, barred with the same; feathers of upper parts narrowly tipped with buffy. *Downy young (dark phase?):* Uniform silky grayish brown, lighter on lower parts. Length about 15.50–21.00, wing 11.80–13.50 (12.67), longest tail-feathers 4.90–6.25 (5.40), culmen 1.15–1.40 (1.27), tarsus 1.50–1.85 (1.70), middle toe 1.20–1.45 (1.34). *Eggs* 2.30 × 1.64. *Hab.* Northern portions of northern hemisphere, breeding toward Arctic regions; south, in winter, to New York, Illinois, Colorado, and even coast of Brazil..37. **S. parasiticus** (Linn.). **Parasitic Jaeger.**

b^2. Length of nasal shield, measured from base of unguis to frontal feathers, not greater than the distance from the former point to the tip of the upper mandible. *In freshly-killed or living specimens,* tarsi light bluish, in marked contrast with black of feet.[1] *Adult:*[2] Top and sides of head sooty black; rest of head and neck, including ear-coverts and nape, straw-yellow, paler on throat; upper parts uniform smoky plumbeous or slate-color, more ashy on back; quills and tail-feathers blackish toward tips; chest (sometimes breast also), and more rarely the belly, white, shading into grayish, the under tail-coverts, sides, and flanks (usually belly also) uniform slate-gray. Length 20.00–23.00, wing 11.55–12.85 (12.25), longest tail-feathers 10.50–14.50 (12.89), culmen 1.10–1.30 (1.19), tarsus 1.50–1.80 (1.66), middle toe 1.08–1.30 (1.20). *Eggs* 2.16 × 1.54. *Hab.* Northern parts of northern hemisphere, breeding in Arctic regions; south, in winter, to California, Florida, etc.

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[1] In dried skins this color usually changes to a light olive or yellowish, or in very rare instances becomes so darkened that the line of demarcation cannot be detected.

[2] So far as known, this species has no dark phase like *S. parasiticus*.

38. **S. longicaudus** Vieill. **Long-tailed Jaeger.**

Family **LARIDÆ**.—The Gulls and Terns. (Page 20.)

Genera.

a^1. Depth of bill decidedly greater at the angle than at the nostril; terminal portion of culmen decidedly curved; angle of lower mandible always distinct, often very prominent; tail usually even, but sometimes slightly emarginate (*Rissa*), deeply emarginate or forked (*Xema*), or graduated (*Rhodostethia*). Size extremely variable (wing 8.75–20.00). (Subfamily *Larinæ.*)

  b^1. Tarsus roughened or serrate behind.

    Tail even; tarsus shorter than middle toe, with claw; hind toe perfectly developed, but small; size medium (wing about 13.25); color entirely white, the young scantily spotted with dusky..... **Gavia.** (Page 24.)

  b^2. Tarsus not roughened or serrate behind.

    c^1. Hind toe rudimentary or altogether absent.

      Tail slightly emarginate; tarsus shorter than middle toe, without claw; size medium (wing about 12.00–13.00); *adult* white, with bluish gray mantle;[1] *young*, similar to adult, but hind neck with a blackish patch, and lesser wing-coverts sometimes (in one species) also with a black patch...................... **Rissa.** (Page 24.)

    c^2. Hind toe perfectly developed, though small.

      d^1. Culmen decidedly more than two-thirds as long as tarsus.

        e^1. Tail even; size, color, and all other characters extremely variable... **Larus.** (Page 25.)

        e^2. Tail deeply emarginate or forked........... **Xema.** (Page 37.)

      d^2. Culmen decidedly less than two-thirds as long as tarsus.

        Tail graduated, the lateral feathers .75–1.25 shorter than the middle pair........................... **Rhodostethia.** (Page 37.)

a^2. Depth of bill at angle less than at middle of nostrils; terminal portion of culmen straight, or but slightly curved, the bill being narrow and pointed; angle of lower mandible seldom prominent; tail more or less forked (except in *Anous*). Size extremely variable (wing 6.50–17.50). (Subfamily *Sterninæ.*)

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[1] This is a special term used, chiefly in descriptions of birds of this family, to designate the back, scapulars, and wings, when together colored differently from the head, neck, rump, tail, and lower parts.

b^1. Tail more or less forked, the outer feather longest.

  c^1. Tail much more than one-third as long as wing, usually (except in subgenus *Thalasseus*) forked for more than one-fifth its total length, the outer feathers narrow and pointed at tips; webs of feet occupying more than half the interdigital space.

    d^1. Depth of bill at base equal to one-third the length of the exposed culmen; gonys shorter than outer toe, without claw. **Gelochelidon.** (Page 38.)

    d^2. Depth of bill at base less than one-third the length of the exposed culmen; gonys longer than inner toe, without claw. **Sterna.** (Page 39.)

  c^2. Tail little more than one-third as long as wing, forked for less than one-fifth its total length, the outer feathers broad and rounded at tip; webs of feet occupying less than half the interdigital space. **Hydrochelidon.** (Page 46.)

b^2. Tail graduated.. **Anous.** (Page 47.)

GENUS **GAVIA** BOIE. (Page 23, pl. VIII., fig. 1.)

Species.

Adult: Entirely pure white, the shafts of the primaries pale yellowish; bill yellowish; feet black. *Young:* Similar to adult, but quills, primary coverts, and tail-feathers each marked with a spot of dusky at tip, the lesser wing-coverts spotted with same. Length 15.00–19.50, wing about 13.25, culmen 1.40. *Hab.* Arctic Ocean, south, in winter, along Atlantic coast of North America to Newfoundland and New Brunswick..................................... 39. **G. alba** (GUNN.). **Ivory Gull.**

GENUS **RISSA** LEACH. (Page 23, pl. VIII., fig. 2.)

Species.

COMMON CHARACTERS.—*Adults* with head, neck, rump, upper tail-coverts, tail, tips of secondaries, and entire lower parts pure white; mantle bluish gray, the quills varied with white and black; bill yellowish, feet blackish or bright red in life. *Young* similar to adults, but hind-neck crossed by a blackish collar or patch, and sometimes (in *R. tridactyla*) a blackish patch on lesser wing-coverts and black band across tip of tail. *Downy young* white, tinged above with buffy and yellowish gray, but without spots or other distinct markings. *Eggs* 2–5, ovate, or short-ovate, olivaceous-white, grayish white, brownish white, or buffy, blotched and spotted with brown and lavender-gray.

a^1. Legs and feet black, or dusky. *Summer adult:* Pure white, the mantle deep pearl-gray; five outer quills with terminal portion black, this decreasing from about 3.25 on the outer quill to .75 (more or less) on the fifth, the outer web of the first almost wholly black; the fifth, and sometimes the fourth, tipped with white. *Winter adult:* Similar, but hind part of head and neck washed with gray, and a dark plumbeous suffusion before and behind eyes. *Young:* Somewhat like winter adult, but lower part of hind-neck crossed by a black patch, the anterior lesser wing-coverts black, and tail with a broad black band at tip. *Downy young:* Head, neck, wings, and lower parts immaculate white, the hind-neck and basal portion of wings more or less tinged with buff; back, rump, and flanks yellowish gray, the down darker at base. Length about 16.00–17.70, wing about 12.25, culmen 1.40–1.50, tarsus 1.30, middle toe, with claw, 1.80.

b^1. Hind toe absent, or very rudimentary. *Eggs* 2.26 × 1.61. *Hab.* North Atlantic, south, in winter, to middle Atlantic States and Great Lakes.

40. **R. tridactyla** (Linn.). **Kittiwake.**

b^2. Hind toe well developed, though minute, and usually armed with a distinct nail. *Eggs* 2.36 × 1.63. *Hab.* Bering's Sea and North Pacific.

40*a*. **R. tridactyla pollicaris** Stejn. **Pacific Kittiwake.**

a^2. Legs and feet bright red (becoming yellowish in dried skins). *Summer adult:* Pure white, the mantle dark bluish gray, or plumbeous; five innermost quills plumbeous, the inner webs broadly edged with white, the outer tipped with the same; five outermost quills black toward ends, the third, fourth, and fifth tipped with plumbeous. *Winter adult:* Similar, but hind-neck and auriculars washed with plumbeous. *Young:* Similar to winter adult, but hind-neck crossed by a blackish band, ear-coverts crossed by a smaller black band, and a suffusion of same in front of eye. (*No black or dusky on wing-coverts or tail.*) *Downy young:* Not distinguishable from corresponding stage *R. tridactyla* (?). Length about 14.00–15.80, wing about 13.00, culmen 1.20, tarsus 1.25, middle toe, with claw, nearly 2.00. *Eggs* 2.28 × 1.66. *Hab.* Coasts and islands of Bering's Sea.

41. **R. brevirostris** (Bruch). **Red-legged Kittiwake.**

GENUS **LARUS** LINNÆUS. (Page 23, pl. VIII., figs. 3, 4; pl. IX., fig. 3.)

Species.[1]

Nest a rudely constructed platform of rubbish (sticks, dried grass, etc.—the materials varying according to the locality and the species), slightly hollowed, placed among rocks, in marshes, or other localities near the sea-shore or other large bodies of water. *Eggs* 2–4, ovate, their ground-color some shade of pale brownish, olive, light bluish, greenish, or buffy, irregularly spotted or blotched with brown and lavender-grayish.

a^1. Head entirely white in summer.

b^1. Under wing-coverts entirely pure white; head, neck, entire lower parts, tips of secondaries, rump, upper tail-coverts, and tail uniform pure white; mantle (*i.e.*, back, scapulars, and wings, except primaries) uniform grayish, varying in shade from pale pearl-gray to deep slate.

c^1. Primaries uniform pale pearl-gray, fading gradually into white at tips.

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[1] The young birds of this genus seldom offering very obvious distinctive characters, this analysis is based on the adults alone.

d^1. Wing 16.25 or more, and not more than 2.36 times as long as the tail; exposed culmen 1.88 or more. *Adult in summer:* Mantle very pale pearl-gray. *Adult in winter:* Similar, but head and neck streaked with pale brownish gray. *Young:* Grayish white, tinged with brownish gray on lower parts, the upper parts transversely mottled with same. *Immature (second year?):* Entirely white, including mantle and primaries. *Downy young:* Grayish white, paler below; head and neck irregularly marked with scattered large spots of dusky, the back, wings, and rump irregularly clouded with dark grayish.

e^1. Length 26.00–32.00, wing 16.75–18.75 (17.99), tail 7.40–8.50 (8.07), culmen 2.30–2.70 (2.52), depth of bill through angle .80–.95 (.88), through base .83–1.00 (.93), tarsus 2.60–3.05 (2.85), middle toe (with claw) 2.68–3.00 (2.84). *Eggs* 3.13 × 2.14. *Hab.* Coasts of the North Atlantic, and Arctic seas from Cumberland Gulf to Spitzbergen; south, in winter, to Long Island and the Great Lakes.

42. **L. glaucus** Brünn. **Glaucous Gull.**

e^2. Length about 25.00–28.00, wing 16.25–18.00 (17.12), tail 7.00–7.50 (7.28), culmen 1.88–2.30 (2.06), depth of bill through angle .72–.85 (.79), through base .70–.80 (.75), tarsus 2.40–2.78 (2.57), middle toe (with claw) 2.35–2.75 (2.55). *Eggs* 3.05 × 2.03. *Hab.* Bering's Sea and adjacent waters, northeastward to Point Barrow, southwest (in winter) to Japan... 42.1. **L. barrovianus** Ridgw. **Point Barrow Gull.**

d^2. Wing not more than 17.00 (usually less than 16.00), and nearly 2.50 (averaging 2.41) times as long as the tail; exposed culmen not more than 1.70. In plumage exactly like *L. glaucus* and *L. barrovianus*.

Length 24.00–26.00, wing 14.75–16.50 (15.41), tail 6.00–6.70 (6.41), culmen 1.60–1.70 (1.67), depth of bill through angle .62, through base .55–.62 (.59), tarsus 2.10–2.40 (2.22), middle toe (with claw) 2.10–2.35 (2.21). *Eggs* 2.79 × 1.89. *Hab.* Coasts of the North Atlantic; south, in winter, to Massachusetts and the Great Lakes.

43. **L. leucopterus** Faber. **Iceland Gull.**

c^2. Primaries marked with distinct white tips and darker subterminal spaces.

d^1. Darker spaces of primaries gray.

e^1. Second quill very pale pearl-gray, or bluish white, very broadly tipped with white, the outer web with an elongated space of gray, everywhere very sharply defined against the paler ground-color.

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[1] *Larus barrovianus* Ridgw., Auk, iii. July, 1886, 330.

f^1. Wing 17.00, or less; culmen 1.90, or less. *Adult:* Exactly like *L. leucopterus*, except in the coloration of the primaries; length about 23.00–24.00, wing 15.00–17.00, culmen 1.60–1.90, depth of bill through angle .55–.66, tarsus 2.10–2.40, middle toe (with claw) 2.15–2.30. *Hab.* Western coasts of North Atlantic, from Cumberland Gulf south, in winter, to New York.

45. **L. kumlieni** Brewst. **Kumlien's Gull.**

f^2. Wing 18.25, culmen 2.35. *Adult:* In plumage exactly like *L. kumlieni;* depth of bill through angle .80, tarsus 3.05, middle toe (without claw) 2.40. *Hab.* Norton Sound, Alaska............46. **L. nelsoni** Hensh. **Nelson's Gull.**

e^2. Second quill deep ash-gray, either to the extreme tip, or else with very small white tip and small white spaces some distance from the tip, on one or both webs.

Adult: Mantle pearl-gray, darker than in any of the preceding. *In winter*, head and neck clouded (not streaked) with sooty gray. *Young:* Prevailing color deep ash-gray, nearly uniform, and inclining to plumbeous, below, but above relieved by a coarse irregular spotting of grayish white or pale dull buff, the head and neck indistinctly streaked with the same. *Immature* (*second year?*)*:* Similar, but mantle mixed with pearl-gray, and lower parts with whitish. Length 23.70–27.75, wing 16.25–17.30, culmen 2.20–2.60, depth of bill through angle .80–.90, tarsus 2.35–2.90, middle toe (without claw) 2.05–2.45. *Eggs* 2.88–2.03. *Hab.* Coasts of the North Pacific and Bering's Sea, from Japan northward, across through Aleutian chain, and south, in winter, to California.

44. **L. glaucescens** Naum. **Glaucous-winged Gull.**

d^2. Darker spaces on primaries black.

e^1. Shafts of primaries, in black subterminal spaces, white.

Adult: Mantle dark slate, the primaries mostly black, with white tips and spots near end; rest of plumage pure white. *In winter*, top of head and hind-neck streaked with dusky. *Young:* Above dusky, the feathers bordered with pale buffy; quills blackish, with narrow whitish tips; tail dusky, crossed by a narrow subterminal band of grayish, or brownish, white; head, neck, and lower parts white, the top of head and hind-neck streaked, the lower parts clouded or irregularly spotted with grayish brown. *Downy young:* Grayish white, the upper parts marbled or irregularly spotted with dull grayish; head with numerous irregular spots of blackish, the principal of which are two on the crown (one behind the other), four across the occiput, about three (small ones) on lores, the rest irregularly distributed. Length 28.00–31.00, wing 17.60–19.50, culmen 2.40–2.60, depth of bill through angle .98–1.05, tarsus 2.70–3.10, middle toe 2.10–2.50. *Eggs* 3.05 × 2.12, the ground-color averaging deeper brownish and the spots larger than in *L. glaucus*. *Hab.* Coasts of the North Atlantic; in America, south, in winter, to Virginia or beyond.

47. **L. marinus** Linn. **Great Black-backed Gull.**

*e*². Shafts of primaries black, except within the white spaces.

*f*¹. Two outer primaries without distinct gray "wedges" on inner webs.

*g*¹. Angle of lower mandible very prominent, the depth of the bill through the angle being decidedly greater than at base; middle toe, with claw, as long as tarsus. *Summer adult:* Mantle deep plumbeous. *Winter adult:* Top of head and hind-neck streaked with dusky; otherwise as in summer. *Young:* Above brownish slate, irregularly varied with grayish white; quills and tail-feathers uniform dull black, narrowly tipped with white; lower parts brownish gray, clouded or irregularly spotted with grayish white, the breast and belly nearly uniform grayish. *Downy young:* Grayish buffy white, the head with distinct black blotches of indefinite arrangement; upper parts clouded or irregularly blotched with brownish dusky; lower parts, except throat, immaculate. Length 24.00–27.00, wing 15.75–17.00, culmen 2.00–2.35, depth of bill at angle .85–.95, tarsus 2.45–2.65, middle toe (without claw) 2.00–2.45. *Eggs* 2.87 × 1.94. *Hab.* Pacific coast of United States, south to Cape St. Lucas... 49. **L. occidentalis** Aud. **Western Gull.**

*g*². Angle of lower mandible not very prominent, the depth of the bill at angle being little if any greater than through base. In plumage not essentially different from *L. occidentalis*, but feet yellow, instead of flesh-colored, in life; wing 16.00–17.00, culmen 2.00–2.10, depth of bill through angle .60–.68, through base .60–.72, tarsus 2.18–2.68, middle toe 1.65–1.95. *Hab.* Northern Europe, south, in winter, to Africa.

L. fuscus Linn. **Lesser Black-backed Gull.**[1]

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[1] *Larus fuscus* Linn., S. N. ed. 10, i. 1758, 136.

f^2 Two outer primaries with a distinct gray wedge on inner web.

g^1. Depth of bill through angle contained less than four and a half times in the length of the tarsus; lower mandible with a red subterminal spot.

h^1. Mantle deep plumbeous-gray, inclining to slate-color.

i^1. Culmen 2.22 or more; depth of bill at angle .75 or more; third quill with a distinct white "mirror" or large spot on inner web between the black and the gray; mantle nearly the same color as in *L. occidentalis*, but averaging a little darker; rest of plumage (except primaries) pure white; feet dull purplish flesh-color in life; length about 26.50, wing 16.75–19.00, culmen 2.15–2.35, depth of bill through angle .75–.90, at base .75–.82, tarsus 2.60–2.75, middle toe (without claw) 2.08–2.40. *Hab.* Coast of northeastern Asia, from Japan (?) to Kamtschatka and northward to Arctic Ocean north of Bering's Strait..........48. **L. schistisagus** STEJN. **Slaty-backed Gull.**

i^2. Culmen 2.15 or less; depth of bill at angle not more than .65; third quill without white spot on inner web between black and gray; mantle same color as in *L. occidentalis*, but apparently averaging a little paler; rest of plumage (except primaries) pure white; feet yellow in life; length about 20.00, wing 16.50–17.25, culmen 2.00–2.15, depth of bill at angle .62–.65, at base .65–.70, tarsus 2.60–2.72, middle toe 1.78–2.10.[1] *Hab.* Northern Asia; accidental in southern Greenland.

50. **L. affinis** REINH. **Siberian Gull.**

h^2. Mantle light plumbeous-gray, or lighter.

i^1. Bill without black spots in adult.

j^1. Mantle plumbeous-gray, or very deep pearl-gray; eyelids (in life) orange-red, and feet yellow; otherwise exactly like *argentatus* and *smithsonianus*, with the markings of the primaries averaging intermediate; length about 26.00, wing 15.15–18.30, culmen 1.90–2.20, depth of bill through angle .60–.80, tarsus 2.15–2.20, middle toe (without claw) 1.60–2.15. *Hab.* Southern Europe and central Asia, from the Mediterranean to Bering's, China, and Japan Seas, and down the North American coast to California, in winter......... 52. **L. vegæ** (PALMÈN). **Pallas's Gull.**

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[1] The specimens measured are all females. Males would somewhat exceed these dimensions.

j^2. Mantle delicate pearl-gray, decidedly paler than in *L. vegæ;* eyelids (in life) yellow, and feet pale flesh-color. *Young:* Brownish gray, nearly uniform on lower parts, the head and neck streaked, and the upper parts irregularly varied with pale grayish buff or dull whitish; quills, their coverts, and tail-feathers, dusky blackish; bill blackish, paler basally. *Downy young:* Grayish white, the lower parts (except throat) immaculate; head marked with irregular spots of black; back, wings, and rump clouded with dusky grayish.

k^1. White near end of outer quill usually extending to extreme tip, without interruption by a subterminal black bar; the latter, if present at all, usually very small and rarely continuous; length about 23.00, wing 15.75–17.90 (16.38), culmen 1.85–2.20 (2.07), depth of bill through angle .72–.80 (.77), tarsus 2.30–2.72 (2.50), middle toe 1.90–2.25 (2.07). *Eggs* 2.91 × 1.98. *Hab.* Europe, etc.; casual in eastern North America? 51. **L. argentatus** BRÜNN. **Herring Gull.**

k^2. White near end of outer quill always separated from the white tip by a distinct subterminal bar or spot of black, this rarely less than .50 of an inch wide, and often extending to the extreme tip; length 22.50–26.00, wing 16.25–17.50 (17.24), culmen 1.95–2.50 (2.24), depth of bill through angle .68–.85 (.79), tarsus 2.30–2.80 (2.57), middle toe (without claw) 1.85–2.25 (2.10). *Eggs* 2.85 × 2.01. *Hab.* Whole of North America, south, in winter, to Cuba and Lower California; breeding from Maine, etc., northward...... 51*a*. **L. argentatus smithsonianus** Coues. **American Herring Gull.**

i^2. Lower mandible with a black spot near end, the upper also sometimes with a black spot.

Adult: Mantle deep plumbeous-gray, as in *L. vegæ* Pall.; bill yellow, with red spot near end of lower mandible, this enclosing, or adjacent to, a smaller black spot; iris deep brown, and feet (in life) pale pea-green or sage-green. *Young:* Above coarsely spotted with brownish gray and pale grayish buff, or dull whitish, the quills and tail-feathers dull blackish; head, neck, and lower parts mottled or clouded with grayish white or brownish gray; bill dusky with black tip. *Downy young:* Grayish white, the head with irregular black spots, most numerous above; upper parts clouded with dusky grayish. Length 20.00–23.00, wing 15.00–16.75, culmen 1.65–2.15, depth of bill at angle .60–.75, tarsus 2.00–2.60, middle toe (without claw) 1.70–1.95. *Eggs* 2.61 × 1.80. *Hab.* Western North America, chiefly in the interior, from Mexico to Alaska......... 53. **L. californicus** Lawr. **California Gull.**

g^2. Depth of bill through angle contained at least four and a half times in the length of the tarsus.

h^1. Bill with a black band near tip.

Adult: Mantle pale pearl-gray (much as in *L. argentatus*); bill greenish yellow, crossed near end by a very distinct black band, the tip sometimes tinged with orange; iris pale yellow, eyelids vermilion-red; feet (in life) pale yellow, sometimes tinged with greenish. *Young:* Above brownish dusky, the feathers broadly bordered and otherwise varied with pale grayish buff or dull whitish; quills blackish, the shorter ones bluish gray basally and tipped with white; tail with basal half (or more) pale grayish, the subterminal third (or more) blackish, the tip narrowly white; lower parts white, spotted along sides with grayish brown; bill blackish, paler toward base. Length 18.00–20.00, wing 13.60–15.75, culmen 1.55–1.75, depth of bill at angle .50–.65, tarsus 1.90–2.45, middle toe (without claw) 1.30–1.60. *Eggs* 2.39 × 1.71. *Hab.* Whole of North America, breeding far northward; south, in winter, to Cuba and Mexico.......... 54. **L. delawarensis** ORD. **Ring-billed Gull.**

h^2. Bill without black in adult.

j^1. Gray "wedge" on inner web of third quill never tipped with white, and not carried definitely farther than tip of sixth, usually not much beyond tip of seventh, quill. *Adult:* Mantle pearl-gray (about intermediate in shade between that of *L. californicus* and *L. argentatus*); rest of plumage, except quills, pure white. *Young:* Head and neck soiled whitish, striped with grayish brown; back, scapulars, and wing-coverts dull grayish brown, margined with grayish white; basal half of tail white, terminal half blackish or dusky, narrowly tipped with white; lower parts dull white, spotted and otherwise marked with dull brown. *Downy young:* "Covered all over with soft yellowish gray down, whiter in tint on the face, throat, and abdomen; forehead blackish brown; entire upper parts spotted here and there with large blackish spots, one or two spots being also on the throat, under parts generally unspotted, except that on the flanks there are some irregular black marks. It may be distinguished from the young of other Gulls by a large black spot which touches the base of the upper mandible, and which is never absent, though often varying in size." (DRESSER.) Length 17.00–18.50, wing 14.00–14.50 (14.30), culmen 1.35–1.60 (1.45), depth of bill through angle .38–.50 (.44), tarsus 1.90–2.25 (2.02), middle toe 1.32–1.65 (1.43). *Eggs* 2.29 × 1.59. *Hab.* Northern portions of eastern hemisphere; accidental in Labrador?

56. **L. canus** LINN. **Mew Gull.**

j^2 Gray wedge on inner web of third quill always terminated with white, and this carried beyond tip of the sixth —often even beyond the tip of the fifth—quill; even the second quill often with a white spot at end of the gray "wedge" on inner web; plumage of adult otherwise as in *L. canus*, but black of primaries much more restricted. *Nearly adult:* Similar to the adult in every respect except coloration of the primaries, which have the dark spaces slaty or very dull blackish, instead of deep black, and more extended, the white tips of some of the quills wanting; tail sometimes (in younger individuals) more or less blotched with dusky at tip, and upper coverts sometimes (in still younger birds) faintly barred with grayish brown. *Young:* Above grayish brown, the feathers bordered with pale grayish buff; rump and upper tail-coverts pale grayish buff or dull buffy white, marked more or less distinctly with irregular grayish brown spots; basal half of tail grayish white, or pale grayish, transversely mottled with darker, the terminal portion dusky grayish brown, forming a well-defined broad band, the extreme tip whitish; head, neck, and lower parts nearly uniform light brownish gray. *Older:* Similar, but light borders to feathers of back, etc., purer white; basal half of tail uniform grayish white; lower parts white, the breast and sides spotted with light grayish brown; upper parts more or less tinged with the pearl-gray of the adult plumage. Length 16.50–18.00, wing 13.20–14.50 (13.93), culmen 1.25–1.70 (1.45), depth of bill through angle .40–.50 (.45), tarsus 1.70–2.10 (1.94), middle toe 1.30–1.55 (1.44). *Eggs* 2.29 × 1.61. *Hab.* Northwestern North America, breeding far north; south, in winter, along Pacific coast to southern California...... 55. **L. brachyrhynchus** RICH. **Short-billed Gull.**

*b*². Under wing-coverts entirely uniform brownish gray, like outer surface of wings; under parts, rump, etc., brownish gray, and tail black, at all seasons and ages.

Summer adult: Head and upper neck white; tail black, tipped with white; quills black; upper parts, uniform plumbeous-slate, the secondaries broadly tipped with white; lower parts uniform deep ash-gray; bill bright red in life. *Winter adult:* Similar, but head dusky (darker than body). *Young:* Sooty grayish brown, the feathers of the upper parts bordered with grayish white or pale buff. *Immature (second year?):* Entire plumage uniform sooty grayish brown, the tail and quills dusky. Length 17.50–21.00, wing 13.50, culmen 1.50. *Hab.* Pacific coast of North America, from British Columbia to Panama.

57. **L. heermanni** CASS. **Heermann's Gull.**

*a*². Head uniform black or dusky in summer. (Lower neck, entire under parts, rump, upper tail-coverts, and tail, uniform pure white, more or less rose-tinted in breeding season; mantle some shade of gray.)

b^1. Tarsus much longer than middle toe, with claw.

Summer adult: Head sooty slate-color; mantle plumbeous-slate; five outer primaries entirely black, or sometimes with a small terminal spot of white; rest of quills plumbeous, tipped with white, the sixth sometimes with a subterminal black spot; bill and feet (in life) dark brownish red. *Winter adult:* Head and neck white, the occiput and ear-coverts spotted or mottled with brownish gray, the eyes more or less surrounded by the same; otherwise as in summer. *Young:* Head, neck, breast, and sides nearly uniform brownish gray, darker on occiput and hind-neck, tinged with buff beneath; mantle grayish brown, the feathers broadly bordered with pale grayish buff; centre of rump light brownish gray; rest of rump, with upper tail-coverts and posterior lower parts, white; basal half of tail light gray, subterminal portion black, the tip narrowly white. *Downy young:* Above grayish fulvous, varying to umber-brown, the head irregularly striped or spotted, the back, wings, and rump marbled, with dusky; lower parts paler, the breast and belly more ochreous, the fore-neck, sides, flanks, and ventral region faintly mottled with darker. Length 15.00–17.00, wing 13.00, tail 5.00, culmen 1.75, tarsus 2.00, middle toe, with claw, 1.50. *Eggs* 2.18 × 1.55. *Hab.* Atlantic coast of United States, south, in winter, through West Indies and along both coasts of Middle America, and as far as the lower Amazon................................ 58. **L. atricilla** Linn. **Laughing Gull.**

b^2. Tarsus not longer than middle toe, with claw.

c^1. Wing more than 10.00; culmen more than 1.00.

d^1. Bill brownish or reddish, its depth through the angle more than one-fourth the culmen. *Summer adult:* Bill bright red (in life), with more or less distinct darker subterminal band; head deep plumbeous-black, with a white spot on each eyelid; mantle deep plumbeous; quills bluish gray, the shafts white, all broadly tipped with white, and the five outer ones marked with a subterminal space of black; lower parts deeply tinted (in fresh specimens) with rose-pink, and middle tail-feather tinged with pearl-gray. *Winter adult:* Similar, but head white, the occiput, region round eyes, and ear-coverts, grayish dusky; bill and feet duller red. *Young:* Top and sides of head (except forehead and lores), with back and scapulars, grayish brown, the longer scapulars bordered terminally with pale grayish buff; quills dusky (inner webs more plumbeous), tipped with white; centre of rump bluish gray; rest of rump, with upper tail-coverts, entire lower parts, forehead, lores, and eyelids, white. Length 13.50–15.00, wing 11.25, culmen 1.30, depth of bill at nostrils .35, tarsus 1.60, middle toe, with claw, 1.60. *Eggs* 2.11 × 1.53. *Hab.*

Interior of North America, breeding from Iowa northward; in winter, south through Middle America and western South America, to Peru.

59. **L. franklinii** Sw. & Rich. **Franklin's Gull.**

*d*². Bill deep black, its depth through the angle less than one-fourth the length of the culmen. *Summer adult:* Head dark plumbeous; mantle delicate pale pearl-gray; three outer quills chiefly white, the outer web of the first and terminal portion of all, black; rest of quills pale pearl-gray, tipped with white, the fifth and sixth marked with a subterminal black space; rest of plumage pure white; feet rich orange-red in life. *Winter adult:* Head white, the occiput tinged with grayish, the ear-coverts marked with a dusky spot; otherwise, as in summer, but feet (in life) pale flesh-color. *Young:* Sides of head and neck, with entire lower parts, upper tail-coverts, and basal two-thirds of tail, white; top of head and upper back brownish gray; a dusky spot on ear-coverts; scapulars and feathers of back grayish brown, tipped with pale buff; central lesser wing-coverts dusky brownish gray; rest of wing-coverts, greater part of inner primaries, with upper part of rump, bluish gray; band across end of tail black or dusky, the tip narrowly white. Length about 12.00–14.00, wing 10.25, culmen 1.20, depth of bill at nostrils .25, tarsus 1.40, middle toe, with claw, 1.40. *Eggs* 1.95 × 1.34. *Hab.* Whole of North America, breeding far northward; in winter, not yet recorded from south of the United States, though reported from Bermudas.

60. **L. philadelphia** (Ord). **Bonaparte's Gull.**

*c*². Wing much less than 10.00; culmen less than 1.00.

Summer adult: Head deep black; mantle delicate pale pearl-gray, the quills similar, tipped with white and usually without black markings. *Winter adult:* Head white, the occiput tinged with gray, and ear-coverts with a dusky spot; otherwise as in summer. *Young:* Forehead, lores, cheeks, entire lower parts, upper tail-coverts, and greater part of tail, white; occiput, ear-coverts, and most of upper parts sooty blackish, the feathers (except on head and neck) bordered terminally with pale buff. Length 10.40–11.50, wing 8.75–9.00, culmen .90, tarsus 1.00, middle toe (without claw) .90. *Hab.* Europe and parts of Asia and Africa; accidental in Bermudas and eastern United States (Long Island).

60.1. **L. minutus**[1] Pall. **Little Gull.**

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[1] *Larus minutus* Pall., Reis. Russ. Reichs, iii. App. No. 35, 1771, 702.

Genus RHODOSTETHIA Macgillivray. (Page 23, pl. VII., fig. 3.)

Species.

Summer adult: Mantle and under surface of wing uniform pale pearl-gray, the secondaries and innermost quills very broadly tipped with pinkish white, and outer web of first quill chiefly black; rest of plumage white, usually more or less (sometimes very strongly) tinged with delicate peach-blossom pink, the middle of the neck encircled by a narrow black collar. *Winter adult:* Similar, but black collar absent, a blackish spot immediately in front of eye, and top of head tinged with pearl-gray. *Young, second summer?* Similar to summer adult (including collar), but smaller wing-coverts, inner secondaries, primary-coverts, alulæ, and adjacent small feathers, together with three outer quills, blackish, the inner web of the latter, however, with marginal half pearl-gray; remaining quills pearl-gray, becoming white on innermost quills, and all of them tipped with black; third, fourth, and fifth tail-feathers broadly tipped with black. *Young:* Back and scapulars heavily spotted or clouded with dusky or sooty blackish, this color prevailing on lower back, where the feathers have buffy tips; top of head and hind-neck also clouded with dusky; middle tail-feathers with the end sooty black for about .85, the succeeding feathers on each side tipped with black in decreasing extent to the third, which has but a slight mottling of dusky at extreme tip; wing-coverts dusky, or sooty, tipped with pale buffy; two innermost quills pure white, the rest parti-colored; head, neck, and lower parts chiefly white, marked anteriorly (except on chin and throat) with narrow bars of dusky. Length 11.50–14.00, wing 9.50–10.50, tail 4.00–5.50 (graduated for .75–1.25), culmen .65–.75, tarsus 1.20–1.25, middle toe 1.00–1.05. *Egg* (single specimen) 1.90 × 1.30, in color like that of *Xema sabinii* (*fide* Seebohm, P. Z. S. 1886, 82). *Hab.* Arctic Ocean, south, in autumn or winter, to northern Alaska, Kamtschatka, Disco Bay, Färoes, Heligoland, and (accidentally) England.

61. **R. rosea** (Macgil.). **Ross's Gull.**

Genus XEMA Leach. (Page 23, pl. IX., figs. 1, 2.)

Species.

*a*¹. Culmen much shorter than tarsus; tail forked for not more than the length of the tarsus; wing not more than 11.25; legs and feet black. (Subgenus *Xema.*) *Summer adult:* Head and upper neck uniform plumbeous, bordered below by a black collar; mantle deep bluish gray; quills black, the five innermost ones varied with white and plumbeous; rest of plumage white; bill black, tipped with yellowish. *Winter adult:* Similar, but head and neck white, except ear-coverts and back of head and neck, which are dull dusky plumbeous. *Young:* Mantle brownish gray, each feather darker subterminally, and margined at tip with pale fulvous or buffy; tail white, with a broad black band near end, this again narrowly tipped with white; upper tail-coverts and entire lower parts white. *Downy young* (*fide* Middendorff):

Upper parts rusty yellow, spotted with black; lower parts whitish gray. Length 13.00–14.00, wing 10.10–11.15, tail 4.50–5.00 (forked for about .60–1.00), culmen 1.00, tarsus 1.25, middle toe, with claw, about 1.25. *Eggs* 2–5, 1.78 × 1.26, ovate, or short-ovate, deep olive (varying in intensity, however), rather indistinctly spotted or blotched with brown. *Hab.* Arctic regions; in North America south, in winter, to New York, the Great Lakes, and Great Salt Lake (casually to Bermudas and Peru).

62. **X. sabinii** (Sab.). **Sabine's Gull.**

a^2. Culmen nearly as long as tarsus; tail forked for at least one and a half times the length of the tarsus; wing about 16.00; legs and feet red. (Subgenus (3.) *Creagrus* Bonap.). *Summer adult:* Head and upper part of neck sooty slate, with a whitish patch at base of bill; mantle pearl-gray, the wing-coverts and outer webs of scapulars whitish; quills black, the shorter ones tipped with white; rest of plumage white; bill black, with yellowish tip; legs and feet bright red. *Young:* Plumage generally, including head and neck, white; hind-neck, back, and scapulars, ashy brown, the tips of the feathers margined with white; tail-feathers (except outermost) with a black subterminal spot; a dusky space immediately in front of eye, and another on ear-coverts. Length about 23.00, wing 16.00, tail 8.00 (forked for about 3.30), culmen 1.85, tarsus 1.90, middle toe, with claw, 2.00. *Hab.* Pacific coast of South America; accidental in California (Monterey? San Diego? San Francisco)................................. —. **X. furcata** (Neb.). **Swallow-tailed Gull.**

Genus GELOCHELIDON Brehm. (Page 24, pl. IX., fig. 4.)

Species.

Summer adult: Top of head and hind-neck deep black; upper parts pale pearl-gray, rest of plumage pure white; bill deep black, feet blackish. *Winter adult:* Similar, but head and neck white, the hind-neck tinged with grayish, the ear-coverts and spot in front of eye darker grayish. *Young:* Similar to winter adult, but upper parts washed with buff or clay-color, the top of head, hind-neck, back, and scapulars sometimes streaked with dusky. *Downy young:* Above light grayish buff, with several large and tolerably well defined dusky spots on hinder half of head, a distinct dusky stripe down each side of hind-neck and upper back, the wings, rump, and flanks with rather distinct large spots of dusky; lower parts white, tinged with grayish on sides of throat; bill brownish, inclining to orange (in life) on lower mandible; feet dull brownish orange (in life). Length 13.00–15.25, wing 11.75–12.25, tail 5.50 (forked for 1.50–1.75), culmen 1.40, depth of bill at base .45. *Nest* along sea-beach, in sand or shingle. *Eggs* 1.84 × 1.33, ovate, light buffy, varying to pale olive-buffy, distinctly spotted and blotched with deep brown and lavender-grayish. *Hab.* Nearly cosmopolitan; in America, Atlantic side, from Brazil north to Long Island, casually to Massachusetts; very rare inland; both coasts of southern Mexico and Central America in winter.

63. **G. nilotica** (Hasselq.). **Gull-billed Tern.**

GENUS **STERNA** LINNÆUS. (Page 24, pl. X., figs. 1–3; pl. XI., figs. 1, 2.)

Species.

a^1. Wing more than 9.00.

b^1. Wing more than 12.00.

c^1. Tail much less than half as long as wing, forked for less than one-fifth its total length; feathers of occiput short, blended; depth of bill at base equal to nearly one-third the exposed culmen; inner webs of quills entirely gray, or slaty. (Subgenus *Thalasseus* BOIE.)

Adult in spring: Above pale pearl-gray, becoming white on tail, and more silvery gray on quills; whole top of head, and nape, uniform glossy black; rest of plumage pure white; bill coral-red (drying orange-red) with dusky tinge near tip; feet black. *Adult immediately after pairing season:* Similar to spring plumage, but black on top of head mixed with white. *Winter adult:* Similar to summer adult, but black of crown, etc., streaked, instead of speckled or flecked, with grayish white. *Young:* Above pale grayish, marked with a few roundish and more or less hastate spots of dusky, largest on tertials; top of head grayish white, the crown flecked with black, this color increasing in extent posteriorly, until nearly uniform on occiput; tail-feathers marked with a dusky subterminal spot; rest of plumage white; bill dull orange-reddish. *Downy young:* Above grayish white, the down of the head dusky gray beneath the surface; back and rump finely and indistinctly mottled with grayish; throat and fore-neck uniform pale grayish, rest of lower parts white. Length 19.00–22.50, wing 15.00–17.40, tail 5.30–6.75 (forked for about .75–1.60), culmen 2.48–3.10, depth of bill through base .75–.95, tarsus 1.60–1.90, middle toe 1.15–1.40. *Nest* (usually solitary) a depression in sand near sea-shore. *Eggs* 2–3, 2.66 × 1.77, ovate or elliptical-ovate, pale grayish buff, varying to olive-buff or dull whitish buff, more or less spotted with brown and stone-gray or lavender-gray. *Hab.* North America in general, but rare on Pacific coast; breeding in isolated and widely separated localities throughout its range. (Also occurs in various portions of eastern hemisphere, including Australia.)...... 64. **S. tschegrava** LEPECH. **Caspian Tern.**

c^2. Tail more than half as long as wing, forked for at least half its total length; feathers of occiput lengthened, lanceolate, forming a distinct crest; depth of bill at base much less than one-third the length of the exposed culmen; inner webs of quills with inner margin abruptly and broadly white. (Subgenus *Actochelidon* KAUP.)

d^1. Bill deep orange, or orange-red.

e^1. Depth of bill at base more than one-fourth the length of the exposed culmen. *Adult in spring:* Above pale pearl-gray, paler (nearly white) on upper tail-coverts and tail; whole top of head, including occipital crest, glossy black; rest of plumage pure white; bill deep orange, feet blackish. *Adult just after pairing season:* Similar, but forehead and forepart of crown white, only the occipital crest and hinder part of crown being uniform black. *Winter plumage:* Similar to summer plumage, but black of occiput also mixed more or less with white, and bill paler orange. *Young:* Somewhat like winter adult, but upper parts sparsely spotted with dusky brown, these spots largest on tertials; tail-feathers brownish or dusky near tips; top of head speckled white and dusky, the occipital crest but slightly developed; bill dull orange. Length 18.00–21.00, wing 14.00–15.00, tail 6.00–8.00, forked for about half its total length; culmen 2.40–2.75, depth of bill at base .65–.75, tarsus 1.35–1.45. *Nest* (usually many together) a depression in sand, near sea-shore. *Eggs* 1–3 or 4, 2.61 × 1.78, ovate, elongate-ovate, or subacute-ovate, buffy, cream-color, or whitish, handsomely spotted (sometimes lined) with dark brown or black, these markings usually suffused exteriorly with light brown and purplish gray. *Hab.* Coasts and larger inland waters of United States, and southward, breeding north to about 40°................ 65. **S. maxima** BODD. **Royal Tern.**

*e*². Depth of bill at base less than one-fourth (about one-fifth) the length of the exposed culmen; plumage same as that of *S. maxima*, but lower parts very deeply tinged with rose-, or peach-blossom, pink, and occipital crest more developed; length about 16.00–17.00, wing 12.40–12.50, tail 6.60–7.30, forked for about 2.60–3.50; culmen 2.25–2.55, depth of bill through base .45–.50, tarsus 1.05–1.25. *Eggs* 2.15 × 1.45, ovate, creamy white, boldly spotted (chiefly round larger end) with black and various shades of rich warm brown. *Hab.* Pacific coast of Middle America, north to San Francisco, California...... 66. **S. elegans** GAMB. **Elegant Tern.**

*d*². Bill deep black, usually with yellowish or whitish tip; plumage the same as in *S. maxima* and *S. elegans*, but usually less pinkish beneath than the latter; length 14.00–16.00, wing about 12.50, tail 6.00 (forked for about 2.35), culmen 2.25, depth of bill at base .48, tarsus 1.00. *Nest* a depression in sand by sea-shore. *Eggs* 1.99 × 1.38, ovate, white, buffy, or rich cream-color, handsomely but variously marked (often with zigzag lines) with different shades of rich brown, black, etc. *Hab.* South Atlantic and Gulf coasts of United States, north to southern New England; south, in winter, to West Indies and Middle America (both coasts).

67. **S. sandvicensis acuflavidus** (CABOT). **Cabot's Tern.**

b^2. Wing less than 12.00; occipital feathers short and blended.

c^1. Mantle bluish gray, the tail chiefly white; inner webs of quills largely white. (Subgenus *Sterna.*)

d^1. Top of head without any black at any season.

Adult in summer: Head, axillars, lining of wing, and tail-coverts, white, the first with a dusky stripe along each side, entirely surrounding eye, and extending back over ear-coverts; rest of plumage pale pearl-gray, the quills inclining to silvery white; bill black in middle portion, the base and tip yellowish. *Winter plumage:* Similar, but lower parts white; bill dusky, tipped with yellowish. Length 15.00–16.00, wing 9.70–10.60, tail 4.60–6.00 (forked for about 1.60–2.60), culmen 1.50–1.70, tarsus .92–.96. *Hab.* Atlantic coast of South America; casual on Atlantic coast of United States (New Jersey and Long Island).

68. **S. trudeaui** Aud. **Trudeau's Tern.**

d^2. Top of head chiefly or entirely uniform black in summer.

e^1. Top of head entirely black in summer.

f^1. Only one web of outer tail-feather entirely white.

g^1. Inner web of outer tail-feather grayish or dusky toward end, the outer web entirely white. *Summer adult:* Above pale pearl-gray, lower parts pure white; entire top of head and nape uniform deep black; bill (in life) dull orange, dusky at tip, feet fine orange-red. *Winter plumage:* Similar, but whole top of head white, tinged on occiput and nape with grayish, the side of the head with a dusky stripe surrounding eyes and extending across ear-coverts; tail shorter and less deeply forked than in summer, the exterior feathers broader and less elongated; bill duller orange, and feet much less intense red; bill dusky or dull brownish orange, darker at tip. *Young:* Similar to winter plumage, but top of head, hind-neck, back, scapulars, tertials, and wing-coverts overlaid by a wash of umber-brown, nearly uniform on back and crown; sides of head tinged with same; tail-feathers all distinctly dusky terminally, especially on inner webs. *Downy young:* Light brownish buff, the breast and belly whitish; upper parts coarsely and irregularly marbled with black, the sides of the head with a few scattered small markings of the same. Length about 14.00–15.00, wing 9.50–10.30, tail 5.00–7.70 (forked for 2.30–5.00), culmen 1.50–1.65, tarsus .90–1.00. *Nest* of dead grasses, etc., in marshes (fresh- or salt-water), often upon "windrows" of sea-weed. *Eggs* 1.78 × 1.23, ovate or short-ovate, varying from olive-buff to olive-brown, coarsely spotted or blotched with dark brown or blackish. *Hab.* Temperate North America, north to Manitoba, south, in winter, to Brazil........ 69. **S. forsteri** NUTT. **Forster's Tern.**

g^2. Inner web of outer tail-feather entirely white, the outer web dusky, in abrupt contrast.

h^1. Tarsus more than .65.

Summer adult: Lower parts pale lavender-gray, or grayish white; whole top of head and nape deep black; rest of upper parts deep pearl-gray, the rump, upper tail-coverts, and greater part of tail pure white; bill bright vermilion-red, blackish at tip; feet (in life) rich orange-vermilion. *Winter adult:* Similar, but forehead, crown, and anterior part of lores white, mixed with black on crown; entire lower parts pure white; bill and feet less intensely red. *Young:* Orbital region, occiput, and nape, dull black; crown mixed blackish and grayish white; forehead, lores, entire lower parts, upper tail-coverts, inner webs of rectrices, and tips of secondaries, white; rest of upper parts pale pearl-gray, the scapulars, interscapulars, and tertials, tipped with pale buff, and marked with a subterminal crescentic spot, or lunule, of dusky brown; anterior lesser wing-coverts dusky, forming a distinct bar across wing; bill brownish dusky, the base of mandible paler and more reddish; feet pale reddish. *Downy young:* Above pale fulvous or grayish buff (the precise shade very variable) coarsely and irregularly marbled with dusky, except on forehead; lower parts white, more or less tinged with buff or pale fulvous on sides and flanks, the throat and cheeks distinctly dusky, or grayish. Length 13.00–16.00, wing 9.75–11.75, tail 5.00–7.00 (forked for 3.50, more or less), culmen 1.25–1.50, depth of bill at base about .33, tarsus .66–.85. *Nest* usually a depression in sand or gravel near sea-shore. *Eggs* 2–4, 1.57 × 1.17, averaging a little paler in ground-color and less heavily blotched than those of *S. forsteri*. *Hab.* Eastern temperate North America, and various parts of eastern hemisphere.

70. **S. hirundo** Linn. **Common Tern.**

*h*². Tarsus not more than .65 (usually much less).

Summer adult: Lower parts deep lavender-gray, changing to white only on lower tail-coverts and on sides of head adjacent to the black cap; upper parts deep pearl-gray, the tips of secondaries, rump, upper tail-coverts, and tail pure white, in marked contrast; bill rich carmine, usually without distinct blackish tip; feet intense carmine. *Winter adult:* Similar, but lower parts white (sometimes tinged with grayish), and forehead, crown, and fore part of lores white, the crown streaked or mixed with black. *Young:* Orbital region, occiput, and hind part of crown dull black; forehead, anterior part of lores, and crown white, the latter stained with brown and mixed with blackish; feathers of dorsal region and wings tipped with pale buff and marked with a subterminal crescent or lunule of brownish dusky, these markings larger on tertials and longer scapulars, and smaller on back; lower rump, upper tail-coverts, and entire lower parts, white, the chin, throat, and sides of jugulum and breast, stained with pale dull brownish; basal half of bill dull orange-red, terminal portion blackish; feet light reddish. *Downy young:* Similar to that of *S. hirundo*, but usually darker colored. Length 14.00–17.00, wing 10.00–10.75, tail 6.50–8.50 (forked for 4.00–5.00), culmen 1.08–1.40, depth of bill through base .30, tarsus .55–.65, middle toe, with claw, .80–.85. *Eggs* 1.62 × 1.15, not distinguishable with certainty from those of *S. hirundo*, but usually with darker ground-color and heavier spotting. *Hab.* Circumpolar regions, south, in winter, to Middle States and California; on Atlantic coast breeding south to Massachusetts.

71. **S. paradisæa** Brünn. **Arctic Tern.**

*f*². Both webs of outer tail-feathers entirely white.

Summer adult: Above delicate pale pearl-gray, fading into silvery white on upper tail-coverts and tail; lower parts exquisitely delicate pale peach-blossom pink, fading into pure white in dried skins; entire top of head, with nape, uniform deep black; bill black, tinged at base (in life) with reddish; feet bright red in life. *Winter adult:* Similar, but forehead and anterior part of crown white, the latter tinged with grayish and indistinctly streaked with blackish. *Young:* Pileum and nape pale buffy grayish, finely mottled or sprinkled with darker, and streaked, especially on crown, with dusky; orbital and auricular regions dusky blackish; remainder of head, and entire lower parts, white, the nape and sometimes side of breast finely mottled with buffy gray; pale pearl-gray of back and scapulars overlaid by pale buff, irregularly mottled with dusky, each feather with a submarginal dusky U-shaped mark; bill brownish dusky; feet dusky (in dried skins). Length 14.00–17.00, wing 9.25–9.75, tail 7.25–7.75 (forked for 3.50–4.50), culmen 1.50, depth of bill at base .35, tarsus .85, middle toe .75. *Eggs* 2–4, 1.66 × 1.21, similar to those of *S. paradisæa*, but ground-color averaging lighter and markings smaller. *Hab.* Atlantic coast of United States; West Indies, and various parts of Old World.

72. **S. dougalli** MONTAG. **Roseate Tern.**

*e*². Top of head black, with a broad white patch on forehead, extending backward on each side of crown to above eyes; a black stripe across lores.

Summer adult: Above deep plumbeous-gray, beneath paler, more lavender-gray; tips of secondaries, upper and lower tail-coverts, tail, sides of head, chin, under wing coverts and axillars pure white; bill and feet entirely deep black. *Winter adult*, unknown. *Young:* Forehead, lores, crown, and entire nape, smoky grayish brown, deepening on occiput into dark sooty, this color extending laterally nearly or quite to eye; the smoke-color of nape extending laterally over side of neck and breast, or sometimes even tingeing the jugulum and fore-neck; back, scapulars, inner wing-coverts, and tertials dull slate-blackish, broadly and sharply bordered terminally with yellowish ochraceous; upper rump dark brownish slate, feathers narrowly tipped with pale fulvous, this preceded by a dusky subterminal bar; lower rump and upper tail-coverts plumbeous-gray, the longer feathers tipped with buff; rectrices pale bluish gray, the feathers becoming dusky subterminally; lower parts, except as described, white; maxilla dusky, mandible light reddish (brownish in dried skins), the terminal third or fourth dusky; legs and feet light reddish. Length 13.25–15.00, wing 9.75–10.75, tail 6.50–7.00 (forked for 2.40–3.75), culmen 1.25–1.40, depth of bill at base .38, tarsus, .60–.75, middle toe .80–.85. *Eggs* 1.69 × 1.12, similar to those of *S. paradisœa*, but averaging rather deeper in ground-color, with larger markings. *Hab.* Eastern Aleutian Islands and northward along coast to or beyond Norton Sound.

73. **S. aleutica** Baird. **Aleutian Tern.**

c^2. Mantle and six to ten middle tail-feathers slaty or blackish. (Subgenus *Haliplana* Wagler.)

d^1. *Adult:* Upper parts, including hind-neck, continuously uniform sooty black, the outer pair of tail-feathers chiefly white; forehead, sides of head, and entire lower parts white, sometimes faintly tinged with bluish gray posteriorly; bill and feet deep black. *Young:* Entirely dark sooty brown, more grayish on lower parts, the anal region and under wing-coverts white; scapulars and wing-coverts narrowly but distinctly tipped with white. *Downy young:* "Head, neck, throat, and entire upper parts, dark gray with a silvery tinge, closely dotted with grayish white; rest of under parts white." (Dresser.) Length 15.00–17.00, wing 12.00, tail 7.00–7.50 (forked for about 3.00–3.50), culmen 1.80, tarsus 1.00. *Eggs* (deposited on rocks or ground, usually without nest) 2.02 × 1.40, white, creamy white, or cream-color spotted with rich chestnut, usually mixed with fainter spots of purplish gray. *Hab.* Tropical and subtropical sea-coasts of both hemispheres; in North America, north to the Carolinas and western Mexico, casually to New England.

75. **S. fuliginosa** Gmel. **Sooty Tern.**

d^2. *Adult:* Lower hind-neck and upper back grayish white, deepening into brownish slate on wings, etc., and deep black on top of head; forehead, sides of head, and entire lower parts pure white; two outer pairs of tail-feathers white; bill and feet black. *Young:* Entire lower parts, with cheeks, forehead, and sides of crown, white, as in adult; nape, occiput, and middle of crown brownish dusky; the last streaked with grayish white; upper parts grayish brown; the scapulars, interscapulars, and tertials margined terminally with grayish white. Length about 14.00–15.00, wing 10.50, tail 6.00–7.00, culmen

1.40–1.60, depth of bill at base .35–.40, tarsus .85. *Hab.* Tropical sea-coasts in general; accidental on Florida coast.

76. **S. anæthetus** Scop. **Bridled Tern.**

a^2. Wing less than 7.00. Tail about half as long as wing, forked for about half its length. (Subgenus *Sternula* Boie.)

Summer adult: Above uniform pale pearl-gray; lower parts, with forehead and stripe on each side of crown, back and above eyes, pure white; stripe from bill to eye, with crown, occiput, and nape, uniform deep black; bill bright yellow, usually with blackish tip; feet bright orange-yellow (in life). *Winter adult:* Similar to summer plumage, but lores, forehead, and crown grayish white (pure white anteriorly); bill dull yellowish, or dusky; feet pale yellow. *Young:* Somewhat like winter adult, but lesser wing-coverts chiefly dusky slate (forming distinct patch), scapulars and interscapulars with submarginal V- or U-shaped marks of dusky, and quills darker. *Downy young:* Above grayish white, varying to delicate buff-yellow, sometimes immaculate, but usually finely mottled with dusky grayish, the head distinctly marked with irregular dots of blackish; lower parts wholly immaculate white. Length 8.50–9.75, wing 6.60, tail 3.50 (forked for about 1.75), culmen 1.20, tarsus .60. *Nest* a depression in shingly beach. *Eggs* 2–4, 1.28 × 0.91, white, buffy white, or buff, spotted with brown and purplish gray. *Hab.* United States (rather southerly) south, in winter, through Middle America (both coasts) to northern coasts of South America.

74. **S. antillarum** (Less.). **Least Tern.**

Genus **HYDROCHELIDON** Boie. (Page 24, pl. XII., fig. 2.)

Species.

a^1. Wing less than 9.00. Head wholly dusky or black in summer adult.

b^1. Tail and upper coverts deep gray or plumbeous.

Summer adult: Head, neck, and lower parts uniform black or plumbeous, the lower tail-coverts, however, white; upper parts uniform plumbeous. *Winter adult:* Head, neck, and lower parts white, the orbits and ear-coverts dusky; above as in summer. *Young:* Similar to winter adult, but feathers of back, etc., tipped with dull brownish, anterior lesser wing-coverts dusky, and sides washed with plumbeous. *Downy young:* Above umber-brown, with a few coarse, irregular mottlings of black; forehead, crown, throat, and chest plain sooty brown; side of head, including lores, dull whitish; belly white centrally, sooty gray exteriorly.

c^1. Summer adult with lower parts (sometimes head also) plumbeous, little if any darker than upper surface. *Hab.* Europe, and parts of Asia and Africa. **H. nigra** (Linn.). **Black Tern.**[1]

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[1] *Sterna nigra* Linn., S. N. ed. 10, i. 1758, 137. *Hydrochelidon nigra* Boie, Isis, 1822, 563.

c^2. Summer adult with lower parts always black or very dark plumbeous, much darker than upper surface; length 9.00–10.25, wing 8.25, tail 3.75 (forked for .90), culmen 1.10. *Nest* in marshes. *Eggs* 1.35 × 0.98, brownish buff or olive-buff, heavily spotted and blotched with dark brown. *Hab.* Temperate North America, south, in winter, to South America, as far as Brazil and Chili.

77. **H. nigra surinamensis** (GMEL.). **American Black Tern.**

b^2. Tail and upper coverts white, sometimes tinged with gray.

Summer adult: Head, neck, and lower parts black, the under tail-coverts white; upper parts plumbeous, more silvery on wings, the anterior lesser coverts being white; legs and feet bright red (drying brownish). *Young:* "Posterior portion of the crown, a patch on the side of the head, and one on the hind-neck dark sooty gray, the feathers with lighter margins, the patch on the hind-neck with brownish markings; rest of the head, neck, and entire under parts pure white; back and scapulars blue-gray, broadly tipped with blackish gray; wings as in the adult in winter, but the wing-coverts tipped with light reddish brown; rump and upper tail-coverts white; tail light French gray, becoming darker towards the tip." (DRESSER.) *Downy young:* "Upper parts warm reddish buff, boldly marked with black on the crown, nape, back, wings, and rump; under parts grayish buff with a sooty tinge, marked with sooty gray on the upper throat; space round the eye nearly white." (DRESSER.) Length about 9.50, wing 7.60–8.20, tail 2.80–3.25, culmen .90–.95. *Nest* in marshes. *Eggs* 1.36 × 0.99, essentially similar in coloration to those of *H. nigra surinamensis.* *Hab.* Europe, etc.; accidental (?) in North America (Lake Koshkonong, Wisconsin).

78. **H. leucoptera** (TEMM.). **White-winged Black Tern.**

a^2. Wing more than 9.00. Head with a broad white stripe on each side, in summer adult. *Summer adult:* Top of head and hind-neck black; broad stripe on side of head (from chin and corner of mouth to behind ear-coverts), lower tail-coverts, and under wing-coverts white; rest of plumage uniform plumbeous. *Hab.* Europe, etc.; accidental in West Indies.

H. leucopareia (NATT.). **Whiskered Tern.**[1]

GENUS ANOUS LEACH. (Page 24, pl. XII., fig. 1.)

Species.

COMMON CHARACTERS.—Plumage uniform sooty brownish, becoming hoary on forehead or top of head. *Nest* on trees or bushes around borders of oceanic islands, rather bulky, composed of sticks, etc. *Egg* single (usually, at least), buffy or buffy whitish, sparsely speckled or spotted, chiefly round larger end, with brown and purplish gray.

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[1] *Sterna leucopareia* NATT., in Temm. Man. 1820, 726. *Hydrochelidon leucopareia* GOULD, Handb. B. Austr. ii. 1865, 406.

*a*¹. Lores dusky, in abrupt and marked contrast with the hoary of the forehead.

*b*¹. Only the forehead distinctly whitish.

Uniform sooty brown, becoming gradually grayer on neck, and passing gradually through intermediate shades to white on forehead; quills nearly black. *Young* (*?*): Similar, but head uniform grayish brown, the frontlet hoary grayish. Length 13.00–16.35, wing 10.00–10.50, tail 6.00, culmen 1.75, depth of bill at base .38. *Egg* averaging 2.06 × 1.37. *Hab.* Intertropical seas generally, also coast of southern Atlantic and Gulf States...... 79. **A. stolidus** (LINN.). **Noddy.**

*b*². Whole top of head distinctly whitish.

*c*¹. White of crown changing gradually into ashy on hind-neck; plumage of body, etc., sooty brown. *Hab.* Intertropical seas and coasts generally, including Gulf coast of Mexico.

A. leucocapillus GOULD. **Black-cheeked Noddy.**[1]

*c*². White of crown abruptly defined against sooty brown of hind-neck; plumage of body, etc., sooty black. *Hab.* Southern Pacific and parts of South Atlantic, north to Uruguay.

A. atrofuscus STONE. **White-crowned Noddy.**[2]

*a*². Lores hoary whitish, like forehead. Hoary ash of occiput and hind-neck changing gradually into sooty brown on chin and throat, the cheeks being grayish. *Hab.* Indian Ocean, etc.

A. tenuirostris (TEMM.). **Slender-billed Noddy.**[3]

FAMILY **RYNCHOPIDÆ**.—THE SKIMMERS. (Page 20.)

Genera.

(Characters same as given for the Family)............... **Rynchops.** (Page 48.)

GENUS **RYNCHOPS** LINNÆUS. (Page 48, pl. VI., fig. 5.)

Species.

*a*¹. Secondaries very broadly tipped with white; tail white, only the middle pair of feathers grayish or dusky; under wing-coverts white. *Summer adult:* Forehead, sides of head, and entire lower parts, white; upper parts, including hind-neck, top of head, and ear-coverts, black, the secondaries and inner primaries broadly tipped with white; tail white, the middle feathers chiefly grayish brown; basal half of bill, with legs and feet, bright vermilion-red in life (changing to dull whitish in dried skins); terminal portion of bill black. *Winter adult:* Similar as to plumage, but the black more brownish, and interrupted by a white collar across hind-neck. *Young:* Above light buff, each feather with a central spot of black, these largest on scapulars; lores and beneath eye uniform pale buff; lower parts white. *Downy young:* Above pale grayish buff, irregularly and sparsely mottled with blackish; lower parts plain white. (Lower mandible not longer than upper in very young birds.) Length 17.00–20.00, wing 14.75–15.75, tail 5.50 (forked for about 1.20), culmen 2.20–2.80, lower mandible 2.90–4.10. *Nest* a depression in sand, near sea-shore. *Eggs* 2–5, 1.74 × 1.32, ovate, or short-ovate, white, buffy white, or pale buff, marked with large bold spots of rich dark or deep brown, and smaller, fainter spots of purplish gray. *Hab.* Sea-coast of warmer parts of America; on the Atlantic side, north, regularly, to New Jersey, casually to Nova Scotia.................................. 80. **R. nigra** Linn. **Black Skimmer.**

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[1] *Anous leucocapillus* GOULD, P. Z. S. 1845, 103; Birds Austr. pt. vii. 1848, pl. 35.

[2] *Anous leucocapillus* (nec GOULD) SAUNDERS, P. Z. S. 1876, 670. *Anous atrofuscus* STONE, Pr. Ac. Nat. Sci. Philad. 1894, 117.

[3] *Sterna tenuirostris* TEMM., Pl. Col. 202 (1838). *Anous tenuirostris* SAUNDERS, P. Z. S. 1876, 670, pl. 61, fig. I.

a^2. Secondaries without white tips; tail dusky, the feathers with paler edges; under wing-coverts brownish gray; otherwise similar to *R. nigra*, but averaging larger, with longer bill and wing especially. *Hab.* Coasts of South America (Peru; Demerara, etc.).

R. melanura Boie. **Black-tailed Skimmer.**[1]

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[1] *Rynchops melanurus* "Boie," Swains. Anim. in Menag. 1838, 340.

ORDER **TUBINARES**.—THE TUBE-NOSED SWIMMERS. (Page 1.)

Families.

a^1. Wings very long; nostrils opening in anterior end of horizontal nasal tubes.
  b^1. Nasal tubes widely separated by the intervening culmen; size very large (equal to a large goose or larger); wing very narrow, with very numerous (39–50) remiges........................ **Diomedeidæ.** (Page 50.)
  b^2. Nasal tubes united, and resting upon the basal portion of the culmen; size and other characters extremely variable, but usually medium-sized or small, and remiges never more than 39 (usually 30, or less). **Procellariidæ.** (Page 53.)
a^2. Wings very short, and general appearance decidedly Auk-like; nostrils opening upwards, as parallel longitudinal slits, at very base of culmen. **Halodromidæ.** (Extralimital.)

FAMILY **DIOMEDEIDÆ**.—THE ALBATROSSES. (Page 50.)

Nest a mound-like heap of grasses, etc., with depressed top, built upon the ground in open situations, on oceanic islands. *Egg* single, ovate, or elliptical ovate, white, sometimes speckled or sprinkled on larger end with reddish brown.

Genera.

a^1. Sides of lower mandible without longitudinal groove; wing three or more times as long as the short, rounded tail.
  b^1. Upper division of the bill much broadest at base, where joined closely to the lateral division.. **Diomedea.** (Page 50.)
  b^2. Upper division of the bill narrow, and of equal width from the middle of the culmen to the base, where widely separated from the lateral division by the interposition of a strip of naked skin extending from the nasal tubes to the forehead.......................... **Thalassogeron.** (Page 52.)
a^2. Sides of lower mandible with a distinct longitudinal groove, extending the entire length of the lateral division; wing only about twice as long as the graduated or wedge-shaped tail................................ **Phœbetria.** (Page 53.)

GENUS **DIOMEDEA** LINNÆUS. (Page 50, pl. XIII., figs. 1, 2.)

Species.

a^1. Culmen very concave; feathers at base of upper mandible extending in an angle nearly or quite to the base of the nasal tube, those at the base of the lower mandible forming a still more decided angle. (Subgenus *Diomedea*.)

Wing 26.50–29.00 inches; total length, 44.00–55.00, extent, 125.00–130.00. *Adult:* White, the remiges blackish. *Young:* Dusky, with fore part of the head whitish (older individuals with more white, according to age). *Egg* 4.95 × 3.15, white, minutely sprinkled over large end with brownish (adventitious stain in pores of shell?). *Hab.* Southern seas in general, north, casually or very irregularly, to Florida (Tampa Bay and mouth of St. John's River) and coast of Washington.

—. **D. exulans** Linn. **Wandering Albatross.**[1]

a^2. Culmen slightly concave, the bill more compressed; feathers at base of maxilla extending in a nearly straight obliquely transverse line far back of the nasal tube, those at the base of the lower mandible also extending nearly straight across.

b^1. Lateral division of the bill narrower at base than in the middle. (Subgenus *Phœbastria* Reich.[2])

c^1. Length 28.50–36.00, wing 18.50–20.50, culmen 4.00–4.25, depth of bill at base 1.45–1.60, tarsus 3.50–3.70, middle toe 4.05–4.40. *Adult:* Uniform dusky, more grayish below, the tail-coverts, base of tail, and anterior portion of the head white; bill dusky purplish brown; feet black. *Young:* Similar to adult, but upper tail-coverts dusky, and white of head more restricted (sometimes almost obsolete). *Hab.* North Pacific; on the American side, from coast of California (very abundant) to Alaska.

81. **D. nigripes** Aud. **Black-footed Albatross.**

c^2. Length 33.00–37.00, wing 22.00–23.00, culmen 5.50–5.60, depth of bill at base 1.95–2.05, tarsus 3.80–4.00, middle toe 4.65–4.90. *Adult:* White, becoming straw-yellow on head and neck; tail-feathers, remiges, etc, slaty brown, the primaries with yellow shafts. *Young:* Uniform sooty or dusky, the head and neck nearly black; shafts of primaries straw-yellow; bill and feet pale brownish. *Hab.* North Pacific; on the American side occurring from California to Alaska, but chiefly northward.

82. **D. albatrus** Pall. **Short-tailed Albatross.**

b^2. Lateral division of bill broader at base than in middle. (Subgenus *Thalassarche* Reich.[3])

c^1. Lower parts white; upper parts plain dusky.

d^1. Under wing-coverts chiefly, or in large part, white. *Adult* (and *young?*): Head, neck, rump, upper tail-coverts, and entire lower parts white, the sides of the head with a more or less distinct grayish stripe, darkest near the eye; back and scapulars brownish slate, more ashy anteriorly, the wings plain dusky; color of bill varying from pale yellowish in adult to dark horn-color in young; wing 19.50–20.50, tail 8.00–8.50, culmen 4.50–4.60, tarsus 3.05–3.38, middle toe 3.90–4.32. *Hab.* Southern seas, especially South Pacific, casual off coast of California....... —. **D. melanophrys** Boie. **Spectacled Albatross.**[1]

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[1] *Diomedea exulans* Linn., S. N. ed. 10, i. 1758, 132.

[2] *Phœbastria* Reich., Syst. Av. 1852, p. v. Type, *Diomedea brachyura* Temm., = *D. albatrus* Pall.

[3] *Thalassarche* Reich., Syst. Av. 1852, p. v. Type, *Diomedea melanophrys* Boie.

d^2. Under wing-coverts uniform dark slaty or grayish brown. Similar in plumage to *D. melanophrys*, except under wing-coverts, which are uniform dusky instead of partly white; bill olive-brownish, the nails dusky; wing 20.00, tail 9.00, culmen 5.00, depth of bill at base 1.75, tarsus 3.00, middle toe (with claw) 4.75. *Hab.* (Unknown.)
D. gilliana Coues. **Gill's Albatross.**[2]

c^2. Lower parts partly grayish brown; upper parts varied with dusky and white.

Adult (?): Head and neck white, washed with yellow; belly grayish brown, freckled with white; upper back and rump transversely varied with dusky and white. *Hab.* Pacific coast of South America (Callao Bay, Peru).
D. irrorata Salvin. **Speckled Albatross.**[3]

GENUS **THALASSOGERON** RIDGWAY. (Page 50, pl. XIV., fig. 1.)

Species.

COMMON CHARACTERS.—*Adult:* Upper parts chiefly uniform dark brownish slate, more plumbeous on back, especially anteriorly; rump and upper tail-coverts white; tail grayish, the feathers with yellowish white shafts; lower parts white; head and neck sometimes white shaded with plumbeous on top of former and hinder part of latter, sometimes entirely light ash-gray, always with a darker space immediately in front of and behind eye, with a white spot on lower eyelid.

a^1. Culmen 4.50 or less; wing 21.00, or less; bill blackish, with yellowish culmen.

b^1. Culmen continuing broad and flat to the extreme base, which is broad and slightly rounded; tarsus more than 3.00; lower mandible with a yellowish stripe along lower edge, from base nearly to the nail; culmen pale yellowish or greenish; length about 35.00–37.00, wing 17.75–21.00, tail 8.00–9.00, culmen 4.35–4.50, depth of bill at base 1.70–1.75, tarsus 3.25, middle toe (without claw) 4.30–4.35. *Egg* 4.18 × 2.63. *Hab.* Southern oceans (except South Atlantic ?), north, casually, to coast of Oregon.
83. **T. culminatus** (Gould). **Yellow-nosed Albatross.**

b^2. Culmen much compressed, narrowing to an acute angle at extreme base; tarsus less than 3.00; lower mandible without yellow along lower edge, but with a transverse bar of yellow (orange in life) across the base; culmen orange-yellow in life; wing about 19.00, tail 7.00, culmen 4.50, depth of bill at base 1.50, tarsus 2.75, middle toe (with claw) 4.25. *Hab.* Indian, Antarctic, and South Pacific Oceans.

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[1] *Diomedea melanophrys* "Boie," Temm. Pl. Col. No. 456 (1838). Gould, B. Austr. pl. 43. B. B. & R. Water B. N. Am. ii. 1884, 357.

[2] *Diomedea gilliana* Coues, Proc. Ac. Nat. Sci. Phil. May, 1866, 181. Type in mus. Philadelphia Academy Natural Sciences. (Possibly young of *D. melanophrys.*)

[3] *Diomedea irrorata* Salvin, P. Z. S. 1883, 430.

T. chlororhynchus (Gmel.). **Green-billed Albatross.**[1]

*a*². Culmen 4.75 or more; wing 22.00; bill light-colored (pale grayish, with pale yellowish culmen and nails in life), with black line across base of upper mandible and yellow bar at base of lower. ("Clouded with dark gray" in young.) Culmen 4.75–4.90, depth of bill at base 1.90–2.00, tail 10.00, tarsus 3.25, middle toe (with claw) 5.00. *Hab.* South coast of Van Diemen's Land.

T. cautus (Gould). **Cautious Albatross.**[2]

Genus PHŒBETRIA Reichenbach. (Page 50, pl. XIV., fig. 2.)

Species.

Adult (?): Neck, back, and lower parts pale smoky gray; sides of head, chin, and throat deep sooty, nearly black around eyes; eyelids whitish; wings and tail dark sooty slate, the shafts of primaries and tail-feathers yellowish toward base; bill deep black, the grooves whitish; feet pale reddish or yellowish. *Young* (?): Entire head deep sooty blackish, fading gradually into deep smoky gray on lower parts, back, rump, and upper tail-coverts; wings and tail sooty slate, the shafts of the quills and tail-feathers yellowish white; eyelids conspicuously white, except anteriorly; bill and feet as in supposed adult. Length 34.00–37.00, extent 78.00–84.00, wing 20.00–21.50, tail 10.50–13.00, the outer feathers 3.00–5.50 shorter. *Egg* 3.96 × 2.63, white, minutely sprinkled with brown on larger end. *Hab.* South Pacific, north (casually?) to coast of Oregon.

84. **P. fuliginosa** (Gmel.). **Sooty Albatross.**

Family PROCELLARIIDÆ.—The Petrels. (Page 50.)

Nest a hole among rocks (usually on face of cliffs). *Egg* single, white (unless adventitiously stained).

Genera.

*a*¹. Secondaries 13, or more. (Subfamily *Procellariinæ.*)
  *b*¹. Size very large (wing 17.00 or more); tail-feathers 16; bill longer than tarsus.. **Ossifraga.** (Page 57.)
  *b*². Size medium or small (wing 15.00 or less); tail-feathers 12–14; bill shorter than tarsus.
    *c*¹. Wing more than 7.00.
      *d*¹. Culmen more than half as long as middle toe, with claw.
        *e*¹. Inner side of edge of upper mandible without distinct fringe-like processes.

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[1] *Diomedea chlororhyncha* Gmel., S. N. i. 1788, 568.

[2] *Diomedea cauta* Gould, P. Z. S. viii. 1840, 177; B. Austr. pl. 40.

f^1. Bill cylindrical or compressed at base, where not broader than deep.

g^1. Partition between nostrils very thin (very much narrower than width of a single nostril), entirely within the nasal tubes.

h^1. Gonys very slightly or not at all concave, the tip not distinctly decurved; nasal tubes decidedly longer than gonys... **Fulmarus.** (Page 57.)

h^2. Gonys very strongly concave, the tip distinctly decurved; nasal tubes not decidedly longer (usually shorter) than gonys (except in *Bulweria*).

i^1. Depth of bill at shallowest part more than one-fourth the length of the lower mandible, measured along the side.

j^1. Tail more or less graduated, and without white tip.

k^1. Tail less than half as long as wing, and graduated for less than one-third its length; cutting-edge of lower mandible decidedly concave; nail of lower mandible occupying at least one-third the total length of the mandible, measured along its side; plumage and size very variable.

Æstrelata. (Page 63.)

k^2. Tail more than half as long as wing, and graduated for more than one-third its length; cutting-edge of lower mandible straight, or very slightly concave; nail of lower mandible occupying decidedly less than one-third the total length of the mandible, measured along its side; color uniform dusky; wing about 8.00.

Bulweria. (Page 69.)

j^2. Tail slightly rounded, and with a distinct white tip.

Cutting-edge of lower mandible straight, and nail of lower mandible occupying less than one-third its total length, as in *Bulweria;* plumage bluish above, and on sides of chest, the lower parts, forehead, tips of longer scapulars and of tail white; wing about 8.00............... *Halobæna.*[1]

i^2. Depth of bill at shallowest part decidedly less than one-fourth the length of the lower mandible, measured along its side; plumage bluish gray above, becoming white on forehead and blackish on wings; beneath entirely white; wing about 9.00.................................. *Cookilaria.*[2]

g^2. Partition between nostrils very thick (as wide as or wider than nostril), ending anteriorly "flush" with, or but little behind, the anterior rim of the nasal tubes.

h^1. Space between nasal tubes and base of unguis not greater than length of the latter; nostrils not visible from above; color uniform sooty black (browner below), with or without white markings on head; wing 13.50 or more.. *Majaqueus.*[3]

h^2. Space between nasal tubes and base of unguis decidedly greater than length of the latter; nostrils partly (usually entirely) visible from above; color and size very variable, but wing never more than 15.00 (usually much less). **Puffinus.** (Page 58.)

f^2. Bill flattened, broader than deep at base.

Branches of lower mandible bowed widely apart, the space between mostly unfeathered; plumage spotted white and dusky above, entirely white beneath. **Daption.** (Page 69.)

e^1. Inner side of edge of upper mandible with distinct fringe-like processes; color bluish above, the tail tipped with blackish; beneath white; wing about 7.00–7.50.

f^1. Culmen concave; lateral outlines of bill straight. *Pseudoprion.*[4]

f^2. Culmen straight; lateral outlines of bill decidedly convex. *Prion.*[5]

d^2. Culmen less than half as long as middle toe, with claw; tail even; hind claw very large, equal in length to the nasal tubes, measured along the top; color entirely pure white... *Pagodroma.*[6]

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[1] *Halobæna* "Is. Geoffr. 1836," Bonap. Consp. ii. 1857, 193. Type, *Procellaria cærulea* Gmel.

[2] *Cookilaria* Bonap., Compt. Rend. xliii. 1856, 994. Type, *Procellaria cookii* Gray.

[3] *Majaqueus* Reich., Av. Syst. 1852, p. iv. Type, *Procellaria æquinoctialis* Linn.

[4] *Pseudoprion* Coues, Pr. Ac. Nat. Sci. Phil. 1866, 164. Type, *Prion turtur* Gould.

[5] *Prion* Lacépède, Mém. de l'Inst. 1800–1801, 514. Type, *Procellaria vittata* Gmel.

[6] *Pagodroma* Bonap., Consp. ii. 1856, 192. Type, *Procellaria nivea* Gmel.

*c*². Wing less than 7.00.

*d*¹. Tarsus decidedly longer than middle toe, with claw; tail much rounded, or slightly graduated; plumage wholly dusky.
Halocyptena. (Page 69.)

*d*². Tarsus not longer than middle toe, with claw; tail emarginate, even, or at most only very slightly rounded.

*e*¹. Tail even, or very slightly rounded; tarsus twice as long as the culmen; color uniform dusky, with white upper tail-coverts.................................... **Procellaria.** (Page 69.)

*e*². Tail emarginate or slightly forked; tarsus less than twice as long as the culmen; color variable.
Oceanodroma. (Page 70.)

*a*². Secondaries 10. (Subfamily *Oceanitinæ.*)

*b*¹. Tarsus exceeding middle toe, with claw, by less than the length of the bill (measured from forehead); basal division of middle toe shorter than rest of toe, including nail.

*c*¹. Culmen (from frontal feathers) less than half as long as middle toe, with claw.

*d*¹. Front of tarsus distinctly scutellate; distance from tip of tail to end of longest upper coverts shorter than middle toe; first quill shorter than third; lower parts white, forward to the chest; no white on upper parts.. *Garrodia.*[1]

*d*². Front of tarsus not scutellate; distance from tip of bill to end of longest upper coverts much greater than length of middle toe with claw; lower parts dusky, or striped with dusky; upper tail-coverts white.

*e*¹. Claws narrow, pointed; first quill much shorter than third; belly and flanks uniform dusky... **Oceanites.** (Page 71.)

*e*². Claws broad, flat, blunt; first quill longer than third; belly and flanks white striped with dusky.................. *Pealea.*[2]

*c*². Culmen (from frontal feathers) more than half as long as middle toe, with claw; tarsus 2½ times as long as culmen, appreciably scutellate in front; nails broad, flat, and blunt; first quill much shorter than third...................................... **Pelagodroma.** (Page 72.)

*b*². Tarsus exceeding middle toe by more than the length of the culmen; basal division of middle toe longer than rest of toe, including nail; culmen (from frontal feathers) more than half as long as middle toe, with claw; tarsus 2½ times as long as culmen, the anterior scutellæ sometimes appreciable, sometimes obsolete; nails excessively broad (nearly as broad as long), flat, triangular; first quill decidedly shorter than third.
Cymodroma. (Page 71.)

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[1] *Garrodia* FORBES, P. Z. S. 1881, 736. Type, *Procellaria nereis* GOULD.

[2] *Pealea* RIDGW., Auk, iii., July, 1886, 334. Type, *Thalassidroma lineata* PEALE.

GENUS **OSSIFRAGA** HOMBRON & JACQUINOT. (Page 53, pl. XV., fig. 1.)

Species.

Light phase: Head, neck, and lower parts white; upper parts dusky, the feathers (especially scapulars) sometimes tipped with paler; bill light yellowish. (Sometimes entirely white, relieved only by scattered brown feathers.) *Dark phase:* Uniform dark sooty brown, sometimes with whitish feathers round base of bill; bill olive-yellowish or grayish white; length, about 30.00–36.00, extent 72.00–84.00, wing 17.00–21.00, culmen 3.50–4.00. *Hab.* Southern seas, north on Pacific coast of America (casually) to coast of Oregon.

85. **O. gigantea** (GMEL.). **Giant Fulmar.**

GENUS **FULMARUS** LEACH. (Page 54, pl. XVI., figs. 1, 2.)

Species.

a^1. Bill short and stout, its greatest depth very nearly half the total length (measured from frontal feathers); nasal tubes separated from the unguis by a very narrow space, measuring much less than half as much in length as the former; tail-feathers 14. (Subgenus *Fulmarus.*) (4.)

b^1. Nasal tubes distinctly dusky, the whole bill sometimes olive-brownish.

c^1. *Light phase:* Head, neck, and lower parts white; upper parts bluish gray, the quills darker. *Dark phase:* Entirely smoky gray. Length 18.00–20.00, wing 12.50–13.75 (13.04), culmen 1.45–1.58 (1.50), depth of bill at base .65–.80 (.75). *Egg* 2.85 × 2.01. *Hab.* North Atlantic.

86. **F. glacialis** (LINN.). **Fulmar.**

c^2. Similar in color to *F. glacialis,* but much smaller; wing 11.80–12.00 (11.90), culmen 1.30–1.38 (1.33), depth of bill at base .60–.70 (.63). *Hab.* North Atlantic, south on American side to coast of New England....... 86*a*. **F. glacialis minor** (KJAERB.). **Lesser Fulmar.**

b^2. Nasal tubes light-colored; bill never dark-colored.

c^1. *Light phase:* In plumage not with certainty distinguishable from the corresponding phase of *F. glacialis.* *Dark phase:* Much darker than the corresponding phase of *F. glacialis,* the color being a uniform deep sooty plumbeous in living and freshly-killed birds, changing to deep sooty brownish in very old skins. Length 17.00–19.00, wing 11.90–12.35 (12.06), culmen 1.35–1.65 (1.48), depth of bill at base .65–.70 (.68). *Egg* 2.82 × 1.95. *Hab.* North Pacific, south along American coast to western Mexico.

86*b*. **F. glacialis glupischa** STEJN. **Pacific Fulmar.**

c^2. *Light phase:* Similar to corresponding phase of the preceding, but the bluish gray of the upper parts broken by a more or less extensive admixture of white. *No dark phase known.* Wing 12.10–12.90 (12.46), culmen 1.40–1.60 (1.49), depth of bill at base .65–.75 (.72).

Egg 2.83 × 1.91. *Hab.* Bering's Sea and portions of the North Pacific......... 86*c*. **F. glacialis rodgersii** (CASS.). **Rodgers's Fulmar.**

a^2. Bill long and slender, its greatest depth much less than half the total length (measured from frontal feathers); nasal tubes separated from the unguis by a space measuring much more than half as much in length as the former.

b^1. Bill cylindrical at base, or measuring as much in width as in depth; space between nasal tube and base of unguis about equal to the length of the former; upper parts plain; head white; tail-feathers 14. (Subgenus *Priocella* HOMBR. & JACQ.).

Head, neck, and lower parts white; upper parts pale pearl-gray, the quills darker, with inner webs chiefly white; length 18.00–18.50, wing 13.00, culmen 1.75–2.10, depth of bill at base .65. *Hab.* Southern seas, north along Pacific coast of America to coast of Washington Territory... 87. **F. glacialoides** (SMITH). **Slender-billed Fulmar.**

b^2. Bill compressed, or higher than broad, at base; space between nasal tube and base of unguis less than the length of the former; upper parts parti-colored; head dusky; tail-feathers 12. (Subgenus *Thalassoica* REICH.[1])

Head and neck sooty grayish, darker on top; back, scapulars, rump, tip of tail, primary-coverts, lesser wing-coverts, and greater part of primaries, sooty slate; lower parts, secondaries, greater wing-coverts, inner webs of primaries, tail (except terminal band), and upper tail-coverts, white; wing 12.50, culmen 1.40. *Hab.* Antarctic seas.

F. antarcticus (GMEL.). **Antarctic Fulmar.**[2]

GENUS **PUFFINUS** BRISSON. (Page 55, pl. XVI., figs. 3, 4.)

Species.

a^1. Nostrils only partially visible from above, the nasal tubes elevated and inflated anteriorly, where broader than at base; under wing-coverts dusky, and lower parts white. (Subgenus *Priofinus* HOMBR. & JACQ.)

b^1. Above ash-gray, more or less tinged with brown, darker on top of head, quills, and tail-feather; lower parts white, except under wing-coverts and under tail-coverts, which are deep smoky grayish; bill light yellowish, with deep black culmen and nasal tubes, the side of lower mandible also mostly black; wing 12.25–13.50, culmen 1.75–1.85, depth of bill in front of nostril .50–.55, tarsus 2.25–2.30, middle toe, with claw, 2.90. *Hab.* South Pacific, north, casually, to coast of California.

97. **P. cinereus** (GMEL.). **Black-tailed Shearwater.**

b^2. Above brown, the upper tail-coverts tipped with white; wings and tail blackish; lower parts white, including under wing-coverts and tail-coverts; bill yellowish, passing into dusky at tip; wing 15.00, tarsus 2.35, middle toe, with claw, 3.15. *Hab.* Antarctic seas.

P. gelidus (GMEL.). **Ice Petrel.**[3]

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[1] *Thalassoica* REICH., Syst. Av. 1852, p. iv. Type, *Procellaria antarctica* GMEL.

[2] *Procellaria antarctica* GMEL., S. N. i. pt. ii. 1788, 565. *Thallasoica antarctica* REICH., Syst. Av. 1852, p. iv.

[3] *Procellaria gelida* GMEL., S. N. i. 1788, 564.

a^2. Nostrils completely visible from above, the nasal tubes depressed and bevelled anteriorly, where narrower than at base; under wing-coverts white, or else lower parts also dusky.

b^1. Tail much less than half the wing, slightly rounded, or moderately graduated (the graduation not more than two-thirds the length of the tarsus). (Subgenus *Puffinus.*)

c^1. Lower parts white.

d^1. Wing more than 12.00.

e^1. No distinct line of demarcation between white of throat, etc., and smoky gray of top and sides of head and neck; bill yellowish; above brownish gray, feathers of back, etc., tipped with paler; sides of head and neck transversely undulated with ash-gray and white.

f^1. Lower tail-coverts entirely white.

g^1. Length about 18.00, wing 13.00–14.00, culmen 1.80–2.00, depth of bill through base .65–.70, tarsus 1.85–2.00, middle toe 2.10–2.25. *Downy young:* Uniform sooty grayish brown. *Hab.* Middle eastern Atlantic; a specimen from Greenland said to be in Leyden Museum (*cf.* SCHLEG. Mus. P.-B., *Procellariæ*, 1863, p. 24).

P. kuhlii (BOIE). **Cinereous Shearwater.**[1]

g^2. Length about 20.00–22.00, wing 13.75–14.50, culmen 2.10–2.25, depth of bill at base .75–.80, tarsus 2.20–2.25, middle toe 2.45. *Hab.* Western North Atlantic (off coast of Massachusetts).

88. **P. borealis** CORY. **Cory's Shearwater.**

f^2. Lower tail-coverts uniform dark sooty grayish.

Length 19.00, wing 12.50–13.25, culmen 1.60–1.70, depth of bill through base .65–.75, tarsus 2.05–2.12, middle toe 2.15–2.40. *Hab.* Eastern Pacific Ocean from California to Chili.

91. **P. creatopus** COUES. **Pink-footed Shearwater.**

e^2. White of throat, etc., separated very abruptly from the dusky color of top and sides of head and neck; bill blackish. Above smoky grayish brown, feathers of back, etc., with paler tips; longer upper tail-coverts mostly white; belly more or less clouded with smoky gray, the flanks and lower tail-coverts mostly grayish brown; length 19.00–20.00, wing 11.50–13.00, culmen 1.80–1.85. *Hab.* Atlantic Ocean generally.

89. **P. major** FABER. **Greater Shearwater.**

d^2. Wing less than 10.00.

e^1. Above sooty slate, without white tips to wing-coverts, etc.

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[1] For references, see A. O. U. Check List, p. 350.

f^1. Tarsus 1.70, or more.

g^1. Tail 3.10, or less.

Above uniform sooty blackish, the head and neck not perceptibly paler; lower tail-coverts mixed white and dusky, in greatly varying relative amount; length 13.00–15.00, wing 8.50–9.25, tail 2.60–3.10, culmen 1.35–1.40, depth of bill at base .40–.45, tarsus 1.70–1.80, middle toe 1.65–1.70. *Downy young:* Sooty brownish gray above, grayish white below. *Egg* 2.36 × 1.62. *Hab.* Northern Atlantic (chiefly the eastern side) and Mediterranean Sea.......... 90. **P. puffinus** (BRÜNN.). **Manx Shearwater.**

g^2. Tail 3.25, or more.

Above uniform sooty slate, appreciably paler on head and neck; lower tail-coverts wholly sooty grayish; length 12.25–15.00, wing 9.00–9.10, tail 3.25–3.80, culmen 1.30–1.42, depth of bill at base .35–.42, tarsus 1.75–1.85, middle toe 1.68–1.75. *Egg* 1.79 × 1.27. *Hab.* Pacific coast, from Lower California to British Columbia......93. **P. opisthomelas** COUES. **Black-vented Shearwater.**

f^2. Tarsus 1.65, or less.

g^1. Lower tail-coverts with more or less of dusky.

h^1. Above uniform sooty black; white of under side of head extending upward nearly or quite to the eye, sometimes involving part of the lores; length about 11.00, wing 7.60–8.40, tail 3.50, culmen 1.20–1.25, depth of bill at base .35, tarsus 1.50–1.65, middle toe 1.45–1.60. *Egg* 2.05 × 1.45. *Hab.* Warmer parts of Atlantic Ocean, north, casually, to coast of New Jersey..... 92. **P. auduboni** FINSCH. **Audubon's Shearwater.**

h^2. Similar in color to *P. auduboni*, but sides of neck and breast slaty, the feathers with white margins; wing 7.20–7.80, tail 2.95–3.25, culmen .98–1.05, tarsus 1.40–1.45, middle toe, with claw, 1.52–1.60. *Hab.* Pacific Ocean? ("King George's Sound"[1]), west to the Seychelles. **P. tenebrosus** PELZ. **Pelzeln's Shearwater.**[2]

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[1] LATHAM ("Synopsis," iii. pt. ii. p. 417) says "King George's Sound, on the American coast"; but VON PELZELN (Ibis, 1873, p. 47) thinks that this is a mistake, King George's Sound on the west coast of Australia being meant instead.

[2] *Puffinus tenebrosus* PELZ, Ibis, 1873, 47.

g^2. Lower tail-coverts entirely white.

h^1. Dusky of head extending far below the eye, the white being almost confined to throat and fore-neck; wing 8.30, culmen 1.25, tarsus 1.55, middle toe, with claw, 1.85. *Hab.* Indian Ocean, and southeastward to New Zealand.

P. gavia (FORST.). **Shearwater.**[1]

h^2. Dusky of head not descending below the eye, the ear-coverts and greater part of lores being white; wing 6.50, culmen about 1.00, tarsus 1.25. *Hab.* Australian seas.

P. assimilis GOULD. **Allied Shearwater.**[2]

e^2. Above plumbeous, the larger wing-coverts, scapulars, etc., narrowly tipped with whitish.

Lower parts entirely white; wing 7.30, tail 2.70, culmen 1.07, tarsus 1.70, middle toe, with claw, 1.95. *Hab.* South Atlantic.

P. elegans GIGL. & SALVAD. **Elegant Shearwater.**[3]

c^2. Lower parts uniform dusky, or sooty gray (the chin and throat sometimes whitish).

d^1. Bill black or dusky.

e^1. Culmen much longer than the combined length of the first two divisions of the outer toe.

f^1. Wing more than 11.00; bill horn-gray or dusky brownish; under wing-coverts mottled with white and smoky gray, and with dusky shaft-streaks.

g^1. Under wing-coverts gray, transversely mottled with white at tips; length about 16.00, wing 11.15–12.00, culmen 1.60–1.75, depth of bill at base .50–.55, tarsus 2.05–2.15, middle toe 2.05–2.20. *Egg* 2.58 × 1.78. *Hab.* North Atlantic, from the Newfoundland Banks to South Carolina on the American side.

94. **P. stricklandi** RIDGW. **Sooty Shearwater.**

g^2. Under wing-coverts white, transversely mottled with gray at tips; wing 11.15–12.00, culmen 1.55–1.70, depth of bill at base .45–.55, tarsus 2.12–2.35, middle toe 2.05–2.25. *Hab.* South Pacific, north, on American side, to California..... 95. **P. griseus** (GMEL.). **Dark-bodied Shearwater.**

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[1] *Procellaria gavia* FORST., Descr. An. 1844, 148. *Puffinus gavia* FINSCH, Journ. für Orn. 1872, 256.

[2] *Puffinus assimilis* GOULD, P. Z. S. 1837, 186; B. Austr. vii. pl. 59.

[3] *Puffinus elegans* GIGLIOLI & SALVADORI, Ibis, 1869, 67, 68. SALVIN, Rowley's Orn. Misc. pt. iv. 1876, 256, pl. 34.

*f*². Wing less than 10.00; bill deep black; under wing-coverts uniform deep sooty black.

Uniform sooty black, the lower parts much darker and browner than in *stricklandi* and *griseus;* wing 9.80, tail 3.50, culmen 1.25, tarsus 1.70, middle toe, with claw, 1.98. *Hab.* Pacific Ocean (Christmas Island).

P. nativitatis STREETS. **Christmas Island Shearwater.**[1]

*e*². Culmen less than the combined length of the first two divisions of the outer toe.

Above dark sooty slate, beneath deep sooty gray, paler on throat, where sometimes inclining to whitish; wing 10.00–11.10, tail 3.20–3.60, culmen 1.20–1.28, depth of bill at base .35–.50, tarsus 1.90–2.00, middle toe, with claw, 2.18–2.42. *Hab.* Pacific Ocean, from Alaska and Kamtschatka to Australia.......... 96. **P. tenuirostris** (TEMM.). **Slender-billed Shearwater.**

*d*². Bill light-colored (pinkish or fleshy white in life), the nails blackish. *Hab.* Off western coast of Australia.

P. carneipes GOULD. **Flesh-footed Shearwater.**[2]

*b*². Tail nearly or quite half as long as the wing, graduated for about as much as the length of the tarsus. (Subgenus *Theillus* GLOGER.[3])

*c*¹. Lower parts uniform sooty grayish.

*d*¹. Bill dusky or brownish, with flesh-colored or reddish tinge in life; wing 10.50–11.25, tail 5.00–6.00 (graduated for about 2.00), culmen 1.60, tarsus 1.90, middle toe, with claw, 2.35. *Hab.* Australian seas......... **P. sphenurus** GOULD. **Wedge-tailed Shearwater.**[4]

*d*². Bill "greenish orange," with black tip and culmen; rather larger than *P. sphenurus*. *Hab.* Indian Ocean, from western Australia to Cape of Good Hope.

P. chlororhynchus LESS. **Green-billed Shearwater.**[5]

*c*². Lower parts white.

Top and sides of head white, spotted and streaked with blackish; wing 11.25–12.50, tail 5.85 (graduated for about 1.80), culmen 1.85, tarsus 1.85, middle toe, with claw, 1.30. *Hab.* Japanese seas.

P. leucomelas (TEMM.). **Streaked Shearwater.**[6]

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[1] *Puffinus* (*Nectris*) *nativitatis* STREETS, Bull. U. S. Nat. Mus. No. 7, 1877, 29.

[2] *Puffinus carneipes* GOULD, P. Z. S. 1844, 57.

[3] *Theillus* GLOG., "v. Fror. Notiz. 1827, xvi. 279." Type, *Puffinus chlororhynchus* LESS. (?).

[4] *Puffinus sphenurus* GOULD, Ann. Mag. N. H. 1st ser. xiii. 1844, 365; B. Austr. vii. pl. 58.

[5] *Puffinus chlororhynchus* LESS., Traité, 1831, 613.

[6] *Procellaria leucomelas* TEMM., Pl. Col. livr. 99, pl. 587 (1838). *Puffinus leucomelas* BONAP., Consp. ii. 1856, 203.

GENUS **ÆSTRELATA** BONAPARTE. (Page 54, pl. XVI., fig. 6.)

Species.

*a*¹. Inner webs of primaries wholly dusky or with not much more than basal half white.
    *b*¹. Plumage largely or chiefly white beneath.
        *c*¹. Upper tail-coverts same color as back.
            *d*¹. Wing more than 9.00.
                *e*¹. Tail ash-gray, the exterior feathers whitish, mottled with gray; back, scapulars, rump, etc., plain ash-gray or light plumbeous; wings much darker; lower parts white, the sides of the chest and neck waved or barred with ash-gray.
                    *f*¹. Wing 11.50–12.00, tail 5.00–5.90, culmen 1.45–1.50, tarsus 1.65–1.70, middle toe, with claw, 2.40–2.45; top of head almost entirely white. *Hab.* South Pacific and Indian Oceans.
Æ. lessoni (GARN.). **Lesson's Petrel.**[1]
                    *f*². Wing 9.50–10.50, tail 4.50, culmen 1.10, tarsus 1.33, middle toe, with claw, 1.75; top of head deep ash-gray, except anteriorly. *Hab.* South Pacific and Antarctic Oceans.
Æ. mollis (GOULD). **Downy Petrel.**[2]
                *e*². Tail uniform dusky, the exterior feathers sometimes mottled with whitish.
                    *f*¹. Axillars and under wing-coverts uniform smoky gray or dusky.
                        *g*¹. Culmen 1.25, or more.
                            *h*¹. Width of upper mandible at base equal to the height of the closed bill at base.

Head, neck, and chest uniform sooty grayish brown, darker above, where nearly the same shade as the uniform dark sooty color of the upper parts generally; entire sides, flanks, and outer webs of exterior lower tail-coverts sooty grayish brown, like under surface of wing; rest of lower parts white; wing 11.10, tail 4.70 (graduated for 1.40), culmen 1.28, width of bill at base .65, depth .65, tarsus 1.75, middle toe, with claw, 2.15. *Hab.* South Pacific (Tahiti).

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[1] *Procellaria lessoni* GARNOT, Ann. Sc. Nat. vii. 1826, 54, fig. 4. *Æstrelata lessoni* CASS., Proc. Ac. Nat. Sci. Phil. 1862, 327.

[2] *Procellaria mollis* GOULD, Ann. & Mag. N. H. xiii. 1844, 363; B. Austr. vii. pl. 50. *Æstrelata mollis* COUES, Proc. Ac. Nat. Sci. Phil. 1866, 150.

Æ. rostrata (PEALE). **Thick-billed Petrel.**[1]

h^2. Width of upper mandible at base decidedly less than height of closed bill at base.

i^1. Under tail-coverts dusky.

Head, neck, and chest smoky grayish brown, paler on chest (where feathers are white immediately beneath the surface), still paler on throat, where almost white; sides and top of head, hind-neck, back, and scapulars deeper smoky brownish gray, the dorsal feathers with paler narrow tips; wings, rump, and tail dusky; breast and belly soiled white; wing 12.17–12.50, tail 5.15–5.40 (graduated for 1.60), culmen 1.42–1.60, tarsus 1.65, middle toe, with claw, 1.95–2.42. *Hab.* Southern oceans, including vicinity of Tierra del Fuego.

Æ. incerta (SCHLEG.). **Schlegel's Petrel.**[2]

i^2. Under tail-coverts white.

Otherwise, much like *Æ. incerta*, but throat and a superciliary space more distinctly white; wing 12.00–12.21, tail 5.00–5.50, tarsus 1.49–1.60, middle toe, with claw, 2.20. *Hab.* South Pacific.

Æ. magentæ GIGL. & SALVAD. **Magenta Petrel.**[3]

g^2. Culmen, 1.14, or less.

h^1. Tail 4.75, or more; culmen 1.12, or more.

Above uniform dusky, more grayish anteriorly, especially on forehead; chest, entire sides, and under surface of wing dusky sooty brown, more gray across chest; throat whitish; breast, belly, and greater part of under tail-coverts white; wing 11.20–11.41, tail 4.75–5.50, culmen 1.12–1.14, tarsus 1.30–1.35, middle toe, with claw, 1.83–1.90. *Hab.* South Atlantic (island of Trinidad).

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[1] *Procellaria rostrata* PEALE, Zool. U. S. Expl. 1848, 296, atl. pl. 41. *Æstrelata rostrata* COUES, Pr. Ac. Nat. Sci. Phil. 1866, 144.

[2] *Procellaria incerta* SCHLEG., Mus. P.-B., *Procellariæ*, 1863, 9. *Æstrelata incerta* COUES, Pr. Ac. Nat. Sci. Phil. 1866, 147.

[3] *Æstrelata magentæ* GIGL. & SALVAD., Ibis, 1869, 61. SALVIN, Rowley's Orn. Misc. pt. iv. 1876, 251, pl. 30.

Æ. arminjoniana Gigl. & Salvad. **Arminjon's Petrel.**[1]

h^2. Tail 4.60, or less; culmen 1.10, or less.

Similar in color to *Æ. arminjoniana*, but much darker above, the color inclining to uniform sooty black throughout, the forehead and chest more brownish; wing 10.50–11.10, tail 4.40–4.60, culmen 1.08–1.10, tarsus 1.28–1.35, middle toe, with claw, 1.70–1.78. *Hab.* South Pacific (Hondon and Christmas Islands).

Æ. parvirostris (Peale). **Small-billed Petrel.**[2]

f^2. Axillars and under wing-coverts mostly white.

(5.) Upper parts, including hind-neck and upper tail-coverts, uniform brownish slate, darker on wings and tail and nearly black on head, the feathers of hind-neck and the upper tail-coverts (the latter very abruptly) white beneath the surface; forehead, lores, cheeks, and entire lower parts white, the sides and longer lower tail-coverts sometimes irregularly barred with dusky; wing 11.80–12.00, tail 5.50–5.75 (graduated for about 2.40), culmen 1.22, tarsus 1.40, middle toe, with claw, 1.78. *Hab.* Middle Pacific, from Sandwich Islands to the Galapagos.

Æ. phæopygia Salv. **Dark-rumped Petrel.**[3]

l^2. Wing less than 9.00.

Plumage much as in *Æ. phæopygia*, but back, scapulars, and upper tail-coverts decidedly plumbeous, the latter not white beneath surface; wing 8.35–8.60, tail 3.80–4.00 (graduated for about 1.10–1.40), culmen .95–.98, tarsus .95–1.05, middle toe, with claw, 1.30–1.32. *Hab.* Southern oceans generally.

Æ. brevipes (Peale). **Short-footed Petrel.**[4]

c^2. Upper tail-coverts plain white, in marked contrast with color of back.

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[1] *Æstrelata arminjoniana* Gigl. & Salvad., Ibis, 1869, 62. Salvin, Rowley's Orn. Misc. pt. iv. 1876, 252, pl. 31.

[2] *Procellaria parvirostris* Peale, Zool. U. S. Expl. 1848, 298, atl. pl. 40. *Æstrelata parvirostris* Coues, Pr. Ac. Nat. Sci. Phil. 1866, 146.

[3] *Œstrelata phæopygia* Salvin, Trans. Zool. Soc. Lond. ix. pt. ix. 1875, 507, pl. 88, fig. 1. (Galapagos.) ? *Œstrelata sandwichensis* Ridgw., Water B. N. Am. ii. 1884, 395, in text. (Sandwich Islands.)

[4] *Procellaria brevipes* Peale, Zool. U. S. Expl. Exp. Birds, 1848, 294.—*Æstrelata brevipes* Stejn., Proc. U. S. Nat. Mus. xvi. 1893, 619. (Synonymes are: *Procellaria torquata* Macgilliv.—*Procellaria cookii* Cass., *nec* Gray, *nec* Gould.—*Procellaria desolata* Schlegel, part, *nec* Gmel.)

Top of head, and upper parts generally, except upper tail-coverts, uniform dusky, the back and scapulars paler, with perceptibly still paler terminal margins to the feathers; upper tail-coverts, basal half (approximately) of tail, head and neck, except top of the former (and sometimes the hind-neck also), together with lower parts, including axillars and under wing-coverts, pure white; the sides of the chest sometimes with a brownish gray wash; length 14.00–16.00, wing 11.40–11.75, tail 4.80–5.30 (graduated for 1.25–2.00), culmen 1.22–1.38, tarsus 1.40–1.45, middle toe, with claw, 1.98–2.10. *Hab.* Middle Atlantic, straggling to coasts of North America (Florida and Long Island) and Europe.... 98. **Æ. hasitata** (KUHL). **Black-capped Petrel.**

b^2. Plumage of lower parts chiefly or entirely dusky.

c^1. Upper tail-coverts pale smoke-gray or grayish white, in marked contrast.

Entirely (except upper tail-coverts) uniform sooty brownish, rather paler and grayer below; wing 10.80–11.00, tail 4.95–5.00 (graduated for 1.18–1.20), tarsus 1.38–1.40, middle toe, with claw, 1.95–2.00. *Hab.* Jamaica and adjacent portions of Caribbean Sea.

Æ. jamaicensis (BANCROFT). **Jamaican Petrel.**[1]

c^2. Upper tail-coverts dusky, like rest of plumage.

d^1. Wing more than 9.50.

e^1. Plumage sooty black above.

Lower parts very dark sooty slate, the feathers white beneath the surface; wing 10.75–12.00, tail 4.50–5.60 (graduated for about 1.20), culmen 1.35, tarsus 1.55–1.60, middle toe, with claw, 2.20–2.40. *Hab.* Southern Atlantic, and Antarctic Ocean in vicinity of Kerguelen Island.

Æ. atlantica (GOULD). **Atlantic Petrel.**[2]

e^2. Plumage slaty or dark sooty grayish or plumbeous above.

f^1. Larger (wing more than 11.00); wing 11.20, tail 4.55, culmen 1.10, tarsus 1.25, middle toe, with claw, 1.80. *Hab.* South Atlantic (vicinity of Trinidad Island).

Æ. trinitatis GIGL. & SALVAD. **Trinidad Petrel.**[3]

f^2. Smaller (wing less than 11.00); wing 9.68–10.20, tail 4.17–4.35, culmen 1.05–1.08, tarsus 1.35–1.46, middle toe, with claw, 1.69–1.78. *Hab.* Southern oceans.

Æ. brevirostris (LESS.). **Short-billed Petrel.**[4]

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[1] *Procellaria jamaicensis* BANCROFT, Zool. Jour. v. 1828, 81. *Œstrelata jamaicensis* A. & E. NEWTON, Handb. Jam. 1881, 117.

[2] *Procellaria atlantica* GOULD, Ann. Mag. N. H. xiii. 1844, 362.

[3] *Æstrelata trinitatis* SALVAD. & GIGL., Ibis, 1869, 65. SALVIN, Rowley's Orn. Misc. pt. iv. 1876, 253 pl. 32.

[4] *Procellaria brevirostris* LESS., Traité, 1831, 611. *Œstrelata brevirostris* SALVIN, Rowley's Orn. Misc. pt.

*d*². Wing less than 9.50.

Plumage sooty blackish; wing 9.15, tail 3.82 (graduated for about .44), culmen 1.10, tarsus 1.46, middle toe, with claw, 1.55. *Hab.* West coast of Africa; vicinity of Bourbon Island.

Æ. aterrima (SCHLEG.). **Black Petrel.**[1]

*a*². Inner webs of primaries abruptly white for at least the inner half.

*b*¹. Wing more than 9.00.

*c*¹. Back uniform grayish, brownish, or dusky.

*d*¹. Top of head, back, etc., plain dusky.

*e*¹. Shafts of quills whitish; head, neck, and upper parts plain dark brownish gray, paler (nearly white) on throat and fore-neck; breast, flanks, and under tail-coverts brownish gray; rest of lower parts sometimes white, sometimes entirely dusky; wing 11.19–11.64, tail 3.91–4.17, culmen 1.20. *Hab.* South Pacific, from Sunday Island to Juan Fernandez.

Æ. neglecta (SCHLEG.). **Neglected Petrel.**[2]

*e*². Shafts of quills dark brown; head, neck, and upper parts plain dark slaty (feathers of head and neck white beneath surface, those of back, etc., white at base); upper tail-coverts and tail brownish ash-gray; lores, chin, throat, and under tail-coverts white, the first mixed with blackish; breast, belly, sides, and flanks plain brownish plumbeous, the feathers pure white immediately beneath surface; thighs and chest white irregularly barred or vermiculated with deep grayish; wing 10.00, tail 4.00 (graduated for .90) culmen 1.02, depth of bill at base .50, tarsus 1.20, middle toe, with claw, 1.55. *Hab.* Antarctic Ocean.

Æ. gularis (PEALE). **Peale's Petrel.**[3]

*d*². Top of head white, spotted with grayish.

Back and scapulars fine bluish gray, or plumbeous; lesser wing-coverts slaty blackish; greater and middle coverts slate-gray, broadly margined with white; tail mostly white, irregularly barred and vermiculated with gray; lores, cheeks, chin, throat, middle of chest, and under tail-coverts immaculate pure white; a blackish spot immediately beneath eye; sides of neck and chest densely

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v. 1876, 235 (in text). *Æstrelata grisea* COUES, Pr. Ac. Nat. Sci. Phila. 1866, 148 (ex *Procellaria grisea* KUHL, *nec* LATH.). *Œstrelata kidderi* COUES, Bull. U. S. Nat. Mus. No. 2, 1875, 28 (Kerguelen Island).

[1] *Procellaria aterrima* "VERREAUX," SCHLEG. Mus. P.-B., *Procellariæ*, 1863, 9. *Æstrelata aterrima* COUES, Pr. Ac. Nat. Sci. Phil. 1866, 158.

[2] *Procellaria neglecta* SCHLEG., Mus. P.-B., *Procellariæ*, 1863, 10. *Æstrelata neglecta* COUES, Proc. Ac. Nat. Sci. Phil. 1866, 147.

[3] *Procellaria gularis* PEALE, Zool. U. S. Expl. Exp. 1848, 299. *Œstrelata gularis* BREWST., Bull. Nutt. Orn. Club, iv. 1881, 94 (part).

mottled and vermiculated with ash-gray and white, but the former prevailing; lower breast, belly, sides, and flanks smoky plumbeous superficially, but the feathers all pure white immediately beneath the surface; wing 10.15, tail 4 (graduated for .90), culmen 1.00, tarsus 1.25, middle toe, with claw, 1.70. *Hab.* North Pacific, in vicinity of Alaska (Kadiak).

100. **Æ. fisheri** RIDGW. **Fisher's Petrel.**

*c*². Back plumbeous or plumbeous-black, the feathers bordered with grayish, or whitish, producing a scaled appearance.

*d*¹. Above plumbeous-black, the feathers of back and scapulars margined with gray; hind-neck white, with tips of the feathers pale gray; forehead and lower parts white; wing 11.50, tail 5.00, tarsus 1.40, middle toe, with claw, 1.90. *Hab.* Eastern South Pacific (island of Masafuera)

Æ. externa SALV. **Salvin's Petrel.**[1]

*d*². Above, including whole top of head, dark bluish gray, the feathers of back and scapulars broadly bordered terminally with ashy white, the middle and greater wing-coverts similarly marked; chin, throat, chest, centre of breast, and under tail-coverts plain white; rest of lower parts vermiculated and irregularly barred with slate-gray or plumbeous, this becoming uniform and somewhat darker on belly; tail chiefly plain light brownish gray; wing 9.88, tail 3.95, culmen 1.03, depth of bill at base .46, tarsus 1.37, middle toe, with claw, 1.70. *Hab.* Unknown; the single specimen obtained having been taken in Livingston Co., New York, in April, 1880.

99. **Æ. scalaris** BREWST. **Scaled Petrel.**[2]

*b*². Wing not more than 9.00.

Above ash-gray or plumbeous, changing to white on forehead and over eyes; outer surface of wings uniform; lower parts entirely white, except sides of breast, which are ash-gray, like hind-neck; outermost rectrices entirely white; wing 8.70–9.00, tail 3.80–4.00 (graduated for about .90–1.00), culmen 1.04–1.12, tarsus 1.07–1.20, middle toe, with claw, 1.40. *Hab.* Eastern South Pacific.

Æ. defilippiana GIGL. & SALVAD. **De Filippi's Petrel.**[3]

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[1] *Œstrelata externa* SALV., Ibis, July, 1875, 373.

[2] (= "*Æ. gularis*" of the A. O. U. Check List, but not *Procellaria gularis* PEALE.) *Æstrelata scalaris* BREWST., Auk, iii. July, 1886, 390.

[3] *Æstrelata defilippiana* GIGL. & SALVAD., Ibis, 1869, 63.

GENUS **BULWERIA** BONAPARTE. (Page 54, pl. XIV., fig. 5.)

Species.

COMMON CHARACTERS.—Plumage entirely dusky sooty brownish darker on upper parts.

a^1. Greater wing-coverts rather light sooty grayish brown, like lower parts; above dark sooty brown, paler on greater wing-coverts, nearly black on lesser wing-coverts and quills; lower parts uniform sooty grayish brown. *Downy young:* Uniform dark sooty brown. Length about 10.00, wing 7.70–8.00, tail 4.50–4.75, graduated for 1.45–1.75, culmen .85–1.00, tarsus .90–1.10, middle toe .95. *Egg* 1.73 × 1.22. *Hab.* Eastern Middle Atlantic, chiefly in the vicinity of the Canaries and Madeira; accidental at Bermudas and near coast of Greenland: North Pacific..... 101. **B. bulweri** (JARD. & SELBY). **Bulwer's Petrel.**

a^2. Greater wing-coverts blackish, like rest of wings. ("Like *T. bulweri,* but with bill rather larger; and it is without the sooty brown on the wings."—GRAY.) South Pacific Ocean (Fiji Islands).
B. macgillivrayi (GRAY). **Macgillivray's Petrel.**[1]

GENUS **DAPTION** STEPHENS. (Page 55, pl. XII., fig. 3.)

Species.

Lower parts (except chin and throat), rump, upper tail-coverts, and basal two-thirds of tail, together with greater portion of scapulars and secondaries, white; back, rump, and upper tail-coverts, marked with triangular spots of dark sooty plumbeous; wing, except as described, chiefly sooty plumbeous, as is also the terminal third of the tail; bill deep black; length about 15.00, wing 10.25–11.00, culmen about 1.25. *Hab.* Southern seas in general, north, on Pacific coast of America (accidentally only ?) to California .... 102. **D. capensis** (LINN.). **Pintado Petrel.**

GENUS **HALOCYPTENA** COUES. (Page 56, pl. XII., fig. 4.)

Species.

Plain sooty blackish, lighter and more brownish on lower parts, middle and greater wing-coverts, and fore part of head; bill and feet uniform black; length about 5.75, wing 4.80, tail 2.50, the outer feathers .40 shorter; culmen .45, tarsus .85, middle toe .60. *Hab.* Coast of Lower California to Bay of Panama.
103. **H. microsoma** COUES. **Least Petrel.**

GENUS **PROCELLARIA** LINNÆUS. (Page 56, pl. XVII., fig. 4.)

Species.

COMMON CHARACTERS.—General color sooty blackish, paler or more sooty grayish below, the upper tail-coverts white; bill and feet wholly black.

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[1] *Thalassidroma (Bulweria) Macgillivrayi* G. R. GRAY, Cat. Birds Isl. Pacific, 1859, 56.

a[1]. Longer upper tail-coverts broadly tipped with black; under side of wing with more or less of white; tail even, or slightly rounded; length 5.50–5.75, wing 4.50–4.90, tail 2.40–2.60, culmen .40–.50, tarsus .90, middle toe .60–.65. *Egg* 1.09 × .83. *Hab.* North Atlantic, south to Newfoundland Banks and western coast of Africa.................. 104. **P. pelagica** LINN. **Storm Petrel.**

a[2]. Longer upper tail-coverts entirely white; no white on under side of wing; tail emarginated; wing 5.20, tail 2.40, the middle feathers .20 shorter; tarsus .85, middle toe (with claw) .70. *Hab.* Vicinity of the Galapagos Islands.
P. tethys BONAP. **Galapagos Storm Petrel.**[1]

GENUS **OCEANODROMA** REICHENBACH. (Page 56, pl. XVII., figs. 1, 2.)

Species.

COMMON CHARACTERS.—Above dusky or grayish, with or without white on upper tail-coverts; lower parts uniform bluish gray or sooty, or white interrupted by a grayish band across chest.

a[1]. No white on upper tail-coverts.

b[1]. A white collar round hind-neck.

Lower parts white, with a grayish collar across chest; upper parts grayish, the quills blackish, the forehead and sides of head white; length about 8.25, wing ——?, tail 3.75, tarsus 1.00. *Hab.* North Pacific ("Northwest coast of America").
—. **O. hornbyi** (GRAY). **Hornby's Petrel.**

b[2]. No white collar round hind-neck.

c.[1] Color bluish gray, above and below.

Uniform bluish gray, fading to white on chin, throat, and under tail-coverts; orbital region, longer scapulars, innermost wing-coverts, anterior and outer lesser wing-coverts, together with quills, dusky; other lesser coverts, middle and greater coverts, and tertials, broadly edged with ashy white; length 8.00–9.20, wing 5.90–6.40, tail 3.75–4.00 (forked for about 1.00). *Egg* 1.37 × 1.03. *Hab.* North Pacific, south on the American side to Oregon............. 105. **O. furcata** (GMEL.). **Fork-tailed Petrel.**

c[2]. Color sooty brownish or dusky, above and below.

d[1]. Wing more than 6.50; tarsus 1.00, or more.

e[1]. Sooty blackish, lighter and browner beneath, the greater wing-coverts and outer webs of tertials light grayish brown; wing 6.80, tail 3.90 (forked for about 1.20), tarsus 1.20. *Hab.* Coast of Mexico, north to Lower California.
107. **O. melania** (BONAP.). **Black Petrel.**

e[2]. Sooty slate-color, the head, including throat, appreciably paler and more plumbeous; greater wing-coverts light grayish;

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[1] *Procellaria tethys* BONAP., Comp. Rend. xxxviii. 1854, 662; Consp. ii. 1857, 197. SALV. Trans. Zool. Soc. Lond. ix. pt. ix. 1875, 507, pl. 88, fig. 2.

wing 6.90, tail 3.80 (forked for about 1.20), tarsus 1.00. *Hab.* Coast of Peru.

O. markhami (Salv.). **Markham's Petrel.**[1]

d^2. Wing less than 6.00; tarsus less than 1.00.

Smoky plumbeous, the wing-coverts lighter and more brown, quills and tail dusky, rump and upper tail-coverts ashy plumbeous; wing 5.30–5.40, tail 3.30–3.50 (forked for .70–.90), tarsus .80–90. *Hab.* Coast of California.

(6.) 108. **O. homochroa** (Coues). **Ashy Petrel.**

a^2. Upper tail-coverts at least partly white.

b^1. Upper tail-coverts without black tips; tail-feathers grayish at base; uniform sooty, darker above; upper tail-coverts white, usually more or less mixed with grayish; length 7.50–8.90, wing 6 00–6.30, tail 3.50–4.00 (forked for .80–.90), tarsus .90–.95; feet (including webs) entirely black. *Egg* 1.33 × .97. *Hab.* Seas of the northern hemisphere.

106. **O. leucorhoa** (Vieill.). **Leach's Petrel.**

b^2. Longer upper tail-coverts broadly tipped with black; tail-feathers extensively pure white at base; bill and feet (including webs) entirely black; wing 5.80–6.30, tail 3.00–3.15 (forked for .20–.30), tarsus .85–.90. *Hab.* Sandwich Islands.

(7.) **O. cryptoleucura** Ridgw. **Sandwich Island Petrel.**[2]

Genus OCEANITES Keyserling & Blasius. (Page 56, pl. XVII., fig. 3.)

Species.

Common Characters.—Sooty blackish, lighter beneath, the tail and quills nearly or quite black; upper tail-coverts white; tail even or slightly emarginate.

a^1. Belly entirely dusky; webs of feet mostly yellowish; length about 7.00–7.25, wing 5.70–6.20, tail 3.00–3.25, tarsus 1.30–1.35. *Hab.* Cosmopolitan (on the high seas).

109. **O. oceanicus** (Kuhl). **Wilson's Petrel.**

a^2. Belly white; webs of feet wholly dusky; wing 5.20–5.50, tail 2.25–2.35, tarsus 1.15–1.24. *Hab.* Coast of Chili and north to the Galapagos Archipelago.

O. gracilis (Elliot). **Graceful Petrel.**[3]

Genus CYMODROMA Ridgway. (Page 56, pl. XV., fig. 3.)

Species.

Common Characters.—Head, neck, breast, and upper parts dusky, varying from brownish black to plumbeous, the feathers of back and scapulars sometimes (in fresh plumage) margined terminally with ashy whitish.

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[1] *Cymochorea markhami* Salv., P. Z. S. 1883, 430.

[2] *Cymochorea cryptoleucura* Ridgw., Proc. U. S. Nat. Mus. iv. 1882, 337; Water B. N. Am. ii. 1884, 406.

[3] *Thalassidroma gracilis* Elliot, Ibis, Oct. 1859, 391. *Oceanites gracilis* Coues, Pr. Ac. Nat. Sci. Phil. 1864, 85.

*a*¹. Belly entirely white.

*b*¹. Throat and collar round hind-neck white; length 8.75–9.00; tail emarginated for about .75; tarsus 1.65–1.75, middle toe, with claw, 1.25, or more. *Hab.* Intertropical seas.

C. tropica (GOULD). **Tropical Petrel.**[1]

*b*². Throat usually with only concealed white, and without white on hind-neck; length 7.50–8.00, wing 6.00–6.50, tail 3.00–3.30, even; tarsus 1.40–1.60, middle toe, with claw, 1.05–1.10. *Hab.* Intertropical seas, north, casually, to coast of Florida.

110. **C. grallaria** (VIEILL.). **White-bellied Petrel.**

*a*². Middle line of belly dusky.

No white on hind-neck, but throat sometimes white, and feathers of forehead white beneath surface; dusky of belly usually connected with that on chest; length 8.50–8.75; tail usually emarginated for about .75; wing 6.25–6.75, tarsus 1.60–1.70, middle toe, with claw, 1.05–1.15. *Hab.* South Pacific.

C. melanogaster (GOULD). **Black-bellied Storm Petrel.**[2]

GENUS **PELAGODROMA** REICHENBACH. (Page 56, pl. XV., fig. 2.)

Species.

Forehead, superciliary stripe, and lower parts, pure white; top of head, broad stripe behind eye, and upper parts generally, slate-color, sometimes inclining to plumbeous; upper tail-coverts light ash-gray; quills and tail-feathers blackish; bill black; tarsi deep black; feet black, the webs mostly yellowish; wing 5.90–6.40, tail 2.90–3.30 (forked for .25–.35), tarsus 1.52–1.70, middle toe, with claw, 1.37–1.40. *Hab.* Southern seas, accidental off coast of Massachusetts.

111. **P. marina** (LATH.). **White-faced Petrel.**

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[1] *Thalassidroma tropica* GOULD, P. Z. S. 1837, 366.

[2] *Thalassidroma melanogastra* GOULD, Ann. Mag. N. H. xiii. 1844, 367; B. Austr. vii. 1848, pl. 62.

ORDER **STEGANOPODES.**—THE TOTIPALMATE SWIMMERS. (Page 1.)

Families.

*a*¹. Nostrils distinct; lateral toes nearly equal, and nearly as long as the middle one; whole head feathered.
  Bill conical, compressed, pointed, without terminal hook, or unguis; culmen curved; edge of upper mandible very concave; tail short, graduated, the middle pair of feathers, in adults, very narrow and greatly elongated... **Phaëthontidæ.** (Page 73.)

*a*². Nostrils not perceptible; lateral toes unequal, and one or the other of them much shorter than the middle one; head partly naked.
  *b*¹. Bill conical, the tip of the upper mandible without distinct hook, or unguis.
    *c*¹. Bill very thick through the base, the tip slightly curved; tail about half as long as the wing, graduated or cuneate, the feathers narrowing toward the rather pointed tips............... **Sulidæ.** (Page 74.)
    *c*². Bill slender, the outlines (culmen especially) nearly straight; head very small, the neck extremely long and slender; tail nearly as long as the wing, rounded (fan-shaped when spread), the feathers very broad, the middle pair transversely corrugated in the adult. **Anhingidæ.** (Page 76.)
  *b*². Upper mandible terminated by a distinct hook, or unguis.
    *c*¹. Tarsus moderately lengthened, much longer than the hind toe, including its claw.
      *d*¹. Bill shorter than middle toe, compressed; gular sac small, scarcely distensible; outer toe much longer than middle. **Phalacrocoracidæ.** (Page 77.)
      *d*². Bill much longer than middle toe, much flattened; gular pouch very large, and greatly distensible; outer toe shorter than middle. **Pelecanidæ.** (Page 81.)
    *c*². Tarsus excessively short, hardly equalling the hind toe (including its claw) in length.
      Wings and tail excessively lengthened, the latter deeply forked; middle toe much longer than the outer, its claw flattened and fringed on inner edge; webs very small, occupying less than half the space between the toes........ **Fregatidæ.** (Page 82.)

FAMILY **PHAËTHONTIDÆ.**—THE TROPIC BIRDS. (Page 73.)

Genera.

(Characters same as those of the Family)............... **Phaëthon.** (Page 74.)

GENUS **PHAËTHON** LINNÆUS. (Page 73, pl. XVIII., fig. 1.)

Species.

COMMON CHARACTERS.—Plumage very compact, satiny; color white (sometimes tinged with pink or salmon-color), varied with blackish on upper parts; bill red, orange, or yellow in adults; tarsi and base of toes yellowish, rest of feet black. *Nest* a cavity among rocks on sea-shore of oceanic islands. *Egg* ovate, dilute claret-brown or whitish speckled, sprinkled, spotted, or blotched with deep claret-brown.

*a*¹. Elongated middle tail-feathers with their webs very much broader than the moderately rigid shaft.

*b*¹. Bill yellow or orange. *Adult:* lengthened tail-feathers pinkish or salmon-colored, with black shafts; no black bars on upper parts, the black being in form of patches on scapulars, etc. *Young:* Upper parts irregularly barred with black; tail-feathers marked with a black spot near the end, the middle pair not elongated. Length (of adult, including lengthened tail-feathers) 25.00–32.00, wing about 11.00, elongated tail-feathers 20.00, or less, culmen 2.25. *Egg* 2.21 × 1.54. *Hab.* Intertropical seas, chiefly middle western Atlantic, especially in vicinity of the Bermudas and throughout West Indies, north to Florida; South Pacific (Samoan Islands); accidental in western New York.

112. **P. flavirostris** BRANDT. **Yellow-billed Tropic Bird.**

*b*². Bill coral-red. *Adult:* Lengthened middle tail-feathers pure white, with white shafts (except toward base); upper parts irregularly barred with blackish. *Young:* (Not seen.) Length (of adult with perfectly developed middle tail-feathers) 30.00–35.00, wing 11.75–12.50, elongated tail-feathers 22.00, or less, culmen about 2.50. *Egg* 2.22 × 1.59. *Hab.* Coasts of tropical America (both sides), north to Lower California and West Indies; casual at the Newfoundland Banks.

113. **P. æthereus** LINN. **Red-billed Tropic Bird.**

*a*². Elongated middle tail-feathers with their webs much narrower than the very rigid shaft.

Bill red in life. *Adult:* Lengthened middle tail-feathers dull reddish, with black shafts; wing 13.00, or more, culmen about 2.50. *Hab.* South Pacific.

P. rubricaudus BODD. **Red-tailed Tropic Bird.**[1]

FAMILY **SULIDÆ.**—THE GANNETS. (Page 73.)

Genera.

(Characters same as for the Family)............................ **Sula.** (Page 75.)

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[1] *Phaeton rubricauda* BODD., Tabl. P. E. 1783, 57 (*ex* BUFF. Pl. Enl. 979).

GENUS **SULA** BRISSON. (Page 74, pl. XIX., figs. 1, 2.)

Nest a rude platform of sticks, etc., on rocks, trees, or bushes by sea-shore. *Eggs* 1–2, elliptical or elongate-ovate, chalk-white superficially, but beneath the calcareous crust pale greenish blue.

Species.

a^1. Whole lower jaw, together with chin and entire throat, naked. (Subgenus *Sula.*)

b^1. Young with upper parts variegated.

Young (?): Head, neck, and lower parts white; upper parts dark grayish brown, the feathers with white tips; bill purplish, the upper mandible grayish horn-color; feet dusky (in dried skins); wing 14.60, tail 7.75, culmen 3.60, depth of bill at base 1.20. *Hab.* Coast of Peru.

S. variegata (TSCHUDI). **Peruvian Booby.**[1]

b^2. Young with upper parts unicolored.

c^1. Naked skin of face and throat blackish (dark bluish in life).

Adult: White, the remiges, greater wing-coverts, primary coverts, and alulæ dark sooty brown; middle tail-feathers hoary whitish, dusky at tips; rest of tail-feathers dark sooty brown, whitish basally; feet dull yellowish (drying pale brown or yellowish). *Young:* Head, neck, and upper parts plain dark grayish brown, part of the back and rump streaked with white; lower parts white, the flanks streaked with grayish; length 25.50–29.00, wing 16.15–17.80, tail 7.75–9.10, culmen 3.95–4.15, depth of bill at base 1.40–1.60. *Eggs* 2, 2.46 × 1.74. *Hab.* Intertropical seas, especially the South Pacific and in West Indies, breeding north to the Bahamas; southern Florida.

(8.) 114. **S. cyanops** SUND. **Blue-faced Booby.**

c^2. Naked skin of face and throat light colored (yellowish or reddish in life).

d^1. Feet greenish or yellowish. *Adult:* Head, neck, breast, and upper parts dark sooty brown, the head and neck hoary grayish, in older (?) specimens, sometimes nearly white anteriorly; lower parts, from breast backward, white. *Young:* Nearly uniform sooty brown, paler beneath. Length 30.00–31.00, wing 14.15–16.60 (15.72), tail 6.50–9.70 (8.23), culmen 3.25–3.95 (3.74), depth of bill at base .95–1.40 (1.24). *Eggs* 2, 2.24 × 1.58. *Hab.* Tropical and subtropical coasts of America, north to Georgia and northwestern Mexico.......... 115. **S. sula** (LINN.). **Booby.** (9.)

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[1] *Dysporus variegatus* TSCHUDI, Weigm. Archiv. 1843, 390. *Sula variegata* SCL. & SALV., Nom. Neotr. 1873, 124.

d^2. Feet always reddish. *Adult:* White, the head and neck tinged with buff, the shafts of the tail-feathers yellowish; remiges hoary slate. *Young:* Above sooty brown, the quills and tail-feathers more hoary; head, neck, and lower parts light smoky gray. (Plumage extremely variable, scarcely two specimens being alike.) Length about 27.00–30.00, wing 14.00–16.10 (15.04), tail 7.75–10.65 (8.93), culmen 3.05–3.50 (3.26), depth of bill at base .95–1.20 (1.07). *Eggs* 2, 2.56 × 1.80. *Hab.* Intertropical seas, north to Florida and Lower California.

116. **S. piscator** (LINN.). **Red-footed Booby.**

a^2. Lower jaw (*i.e.*, malar region), together with sides of chin and throat, densely feathered. (Subgenus *Dysporus.*)

Legs and feet blackish. *Adult:* White, the remiges dusky brown, the head and neck above washed with buff. *Young:* Dusky, everywhere streaked or speckled with white. *Downy young:* Entirely covered with fluffy yellowish white down. Length 30.00–40.50, wing about 19.50, tail 10.00, culmen 4.00. *Eggs* 1, 3.00 × 1.92. *Hab.* Coasts of the North Atlantic, south, in winter, to the Gulf of Mexico and northern Africa; breeding from Nova Scotia and British Islands northward.

117. **S. bassana** (LINN.). **Gannet.**

FAMILY ANHINGIDÆ.—THE ANHINGAS. (Page 73.)

Genera.

(Characters as given for the Family)...................... **Anhinga.** (Page 76.)

GENUS ANHINGA BRISSON. (Page 76, pl. XIX., fig. 3.)

Species.

Adult male in summer: Head, neck, and body glossy greenish black; other parts deep black, the scapulars and lesser wing-coverts beautifully spotted (longitudinally) with light silvery gray; exposed surface of middle and greater wing-coverts light silvery gray; tail broadly tipped with pale brown, passing into whitish terminally; sides of neck and hinder part of head, ornamented with lengthened, loose-webbed, or hair-like feathers of a dirty whitish or pale grayish lilac color; feathers of hind-neck also elongated and hair-like, forming a sort of mane, but black. *Adult male in winter:* Similar, but lacking all the elongated feathers of head and neck. *Adult female in summer:* Head, neck, and breast grayish buff, darker on top of head, lighter on breast, where bordered below by a band of chestnut next to the black of the belly; sides of upper neck with a few whitish loose-webbed feathers; otherwise, colored like the male. *Adult female in winter:* Similar to summer plumage, but lacking entirely any ornamental, or lengthened, feathers on head or neck. *Young in second year (?):* Similar to adult female, but lower parts duller black, the chestnut chest-band wanting, and upper parts much duller black, or dusky grayish brown, with the light markings indistinct. *Young in first year:* Similar to the preceding, but lower parts dull grayish buff, darker posteriorly; transverse corrugations on tail-feathers obsolete. *Downy young:* Entirely uniform buff. Length 32.25–36.00, wing about 14.00, tail 11.00, culmen 3.25. *Nest* a rude structure of sticks, etc., in trees or bushes overhanging or near fresh-water rivers, ponds, or lakes. *Eggs* 2–4, 2.12 × 1.34, ovate or elongate-ovate, pale bluish green, with a more or less continuous white calcareous superficial covering. *Hab.* The whole of tropical and subtropical America, north to South Carolina, southern Illinois (vicinity of Cairo), and western Mexico.

118. **A. anhinga** (Linn.). **Anhinga.**

FAMILY PHALACROCORACIDÆ.—THE CORMORANTS. (Page 73.)

Genera.

(Characters same as for the Family)............ **Phalacrocorax.** (Page 77.)

GENUS PHALACROCORAX BRISSON. (Page 77, pl. XX., figs. 1, 2; pl. XXII., fig. 1.)

Nest a rude structure of sticks, etc., placed on trees, bushes, or rocks, near water. *Eggs* 2–5, elongate-ovate, pale bluish green, with a more or less continuous white chalky crust.

Species.

a^1. Bill stout, with decidedly curved upper outline, the middle portion of the culmen being appreciably concave, the terminal nail, or unguis, more or less arched, strongly hooked, and occupying one-third, or more, of the entire length of the upper mandible, measured to the base of the culmen. (Subgenus *Phalacrocorax.*)

b^1. Tail-feathers 14.

Adult: A whitish patch adjoining base of gular pouch; rest of head, neck, and lower parts blue-black; back and wing-coverts grayish brown, each feather bordered with black. *Nuptial plumage:* Head ornamented with white filamentous feathers, occiput with a short mane-like crest, and flanks with a large white patch. *Young in second year (?):* Head, neck, and chest dull grayish brown, becoming dusky on top of head and hind-neck, and brownish white on throat; rest of lower parts brownish dusky, mixed with white along the median line. *Young in first year (?):* Upper part of throat, chest, breast, and middle of belly, white, streaked, except on throat, with grayish brown; top of head, and greater part of neck, grayish brown. *Nestling:* Naked skin dull livid slate, feet purplish dusky, with yellowish brown legs, the gular sac and inside of mouth flesh-color. Length 34.00–40.00, wing 12.90–14.00, tail 7.25–7.75, culmen

2.30–2.85. *Eggs* 2.50 × 1.61. *Hab.* Europe, together with portions of Asia and Africa; Atlantic coast of North America, south, in winter, to coast of New Jersey.
119. **P. carbo** (Linn.). **Cormorant.**

b^2. Tail-feathers 12.

c^1. Wing more than 11.00. *Adult:* Greenish black; back and wings slaty brown, the feathers bordered with black. *Nuptial plumage:* On each side of the crown, behind eye, a tuft of lengthened, narrow, curved, somewhat loose-webbed feathers; gular pouch bright orange (in life). *Young in first year* (?): Head and neck grayish brown, lighter next to gular sac, darker on top and behind; lower parts brownish, darker laterally and posteriorly; gular sac yellowish. *Young, before moulting* (?): Similar to the preceding, but throat, fore-neck, chest, and breast paler, sometimes quite white, or much mixed with this color.

d^1. Nuptial crests chiefly or entirely black.

e^1. Length 29.00–34.00, wing 12.00–13.00 (12.50), culmen 2.00–2.45 (2.25). *Eggs* 2.52 × 1.59. *Hab.* Northeastern North America, south, in winter, to Gulf coast, breeding from northern United States northward........ 120. **P. dilophus** (Sw. & Rich.). **Double-crested Cormorant.**

e^2. Length 21.25–30.00, wing 11.20–12.50 (11.75), culmen 2.00–2.40 (2.17). *Eggs* 2.36 × 1.48. *Hab.* South Atlantic and Gulf States, and lower Mississippi Valley, north to southern Illinois.
118*a*. **P. dilophus floridanus** (Aud.). **Florida Cormorant.**

d^2. Nuptial crests chiefly or entirely white.

e^1. Length about 36.00, wing 12.50–14.00 (13.70), culmen 2.25–2.55 (2.40). *Hab.* Northwest coast of North America, from Alaska south (in winter) to California... 118*b*. **P. dilophus cincinatus** (Brandt). **White-crested Cormorant.**

e^2. Length about 25.00–31.00, wing 11.75–13.00 (12.23), culmen 1.90–2.35 (2.15). *Eggs* 2.40 × 1.47. *Hab.* Coast of California, south to western Mexico (Socorro Island).. 118*c*. **P. dilophus albociliatus** Ridgw. **Farallone Cormorant.**

c^2. Wing less than 10.50.

Adult: Brownish black, with a white line bordering the base of the gular sac; mantle dull brownish slate, the feathers bordered with black. *Nuptial plumage:* Head, neck, and ventral region ornamented with scattered, small, short, white filamentous feathers; pouch brownish in life. *Young:* Head, neck, and lower parts grayish brown, darker on top of head, hind-neck, sides, and under tail-coverts, much paler (sometimes whitish) on upper part of throat (adjacent to gular sac). *Young, before moulting* (?): Similar to the preceding, but throat, fore-neck, chest, and breast much paler, sometimes nearly white, or much mixed with this color. Length 23.00–28.75, wing 9.95–10.40, culmen 1.70–2.00. *Eggs* 2.21 × 1.42. *Hab.* Mexico, Cuba, Gulf States, and lower Mississippi Valley north to southern Illinois (vicinity of Cairo) and eastern Kansas.

121. **P. mexicanus** (Brandt). **Mexican Cormorant.**

*a*². Bill slender, with upper outline nearly or quite straight, the nail small, not arched, and occupying not more than one-fourth the total length of the upper mandible, measured to the base of the culmen (except in *P. perspicillatus*, in which, however, other characters than the last mentioned are as above).

*b*¹. Tail very short (less than half as long as the wing), slightly rounded, composed of 14 feathers; bill decidedly higher than broad at base; no crests or tufts on head or white patch on flanks in nuptial plumage. (Subgenus *Compsohalieus* Ridgw.)

Adult: Head and neck glossy blue-black, with a patch of light brown or brownish white adjoining base of gular sac; lower parts soft dark bottle-green; scapulars and wing-coverts dark dull greenish, bordered narrrowly with black. *Nuptial plumage:* Uppermost scapulars and sides of neck ornamented with long, white or pale straw-colored bristly filaments; gular sac blue. *Young:* Head, neck, and rump silky dark brown, nearly black on hind-neck; upper part of throat and median lower parts paler brown; chest, breast, sides, and flanks, brown. Length about 35.00, wing 10.50–11.75, tail 5.50–6.50, culmen 2.60–2.95. *Eggs* 2 54 × 1.53. *Hab.* Pacific coast, from Cape St. Lucas to the Columbia River.

122. **P. penicillatus** (Brandt). **Brandt's Cormorant.**

*b*². Tail much longer than wing, graduated, composed of 12 feathers (except in *perspicillatus*); bill broader than high at base; nuptial plumage ornamented with double crests, or tufts (one on crown, the other on nape), of broad soft feathers, and flanks with a large white patch. (Subgenus *Urile* Bonap.)

*c*¹. Culmen less than 2.50; tail-feathers 12.

*d*¹. Feathering on side of lower jaw forming a deep projecting angle, the point of which advances forward to beyond the anterior angle of the eye.

Adult: Feathers of forehead advancing to base of culmen; gular sac and naked lores dull coral-red, or reddish brown; head and neck rich, glossy, silky violet-black, more purplish toward head, the lower part of the neck inclining to steel-blue, changing gradually to silky dark green on lower parts; rump also silky dark green; scapulars and wing-coverts bottle-green, tinged more or less with bronzy purplish. *Nuptial plumage:* Neck and rump ornamented with narrow, pure white filamentous feathers, and flanks with a large patch of pure white. *Young:* Uniform brownish dusky, lighter and inclining to brownish gray on head, the upper parts darker and more glossy, with a faint greenish reflection. *Nestling:* Covered with down of a uniform dark sooty gray color. Length 25.00–29.00.

*e*¹. Wing 9.50–10.60 (10.10), tail 6.00–6.75 (6.30), culmen 1.70–2.00 (1.85). *Hab.* Coast of Kamtschatka, and Aleutian Islands; south, in winter, to Kurils and northern Japan.
123. **P. pelagicus** PALL. **Pelagic Cormorant.**

*e*². Wing 10.00–11.40 (10.80), tail 6.25–8.50 (7.00), culmen 1.70–2.10 (1.95); bill much stouter than in *pelagicus.* *Eggs* 2.34 × 1.48. *Hab.* Coast of Alaska, from Norton Sound south to Washington Territory......... 123*a.* **P. pelagicus robustus** RIDGW. **Violet-green Cormorant.**

*e*³. Wing 9.30–10.50 (9.79), tail 5.80–7.00 (6.30), culmen 1.65–2.00 (1.81); bill more slender than in *pelagicus.* *Eggs* 2.29 × 1.49. *Hab.* Pacific coast, from Washington Territory to western Mexico (Mazatlan and Cape St. Lucas)...123*b.* **P. pelagicus resplendens** (AUD.). **Baird's Cormorant.**

*d*². Feathering on side of lower jaw forming a slight or very obtuse angle, the point of which does not advance farther forward than beneath the middle of the eye (usually not nearly so far).

Adult: Feathers of forehead separated from the base of the culmen by a strip of bare skin, connecting the naked lores; gular pouch blue, bordered behind by purplish red corrugations; lores, orbits, and naked frontal skin bright orange (in life); plumage very similar to that of *P. pelagicus*, but neck decidedly more blue, the scapulars and wing-coverts decidedly purplish. *Young:* Uniform brownish dusky, with a faint purplish cast, the upper parts darker and more glossy. *Downy young:* Covered with down of a uniform sooty grayish brown color. Length 31.00–35.00, wing 10.50–11.60, tail 6.30–8.00, culmen 2.05–2.30. *Eggs* 2.44 × 1.49. *Hab.* Prybilof, Aleutian, and Kuril Islands, and coast of Kamtschatka, south, in winter, to northern Japan......... 124. **P. urile** (GMEL.). **Red-faced Cormorant.**

*c*². Culmen 3.75, or more; tail-feathers 14.

Nuptial plumage: Head rich, glossy, silky violet-purple, neck glossy greenish blue, body rich dark green; head and neck ornamented with slender straw-yellow filamentous feathers, and flanks with a large patch of white; scapulars and wing-coverts deep purplish; quills and tail-feathers black, the latter with white shafts. (In life, eye surrounded by a broad white ring of naked skin; naked skin round base of bill, and gular sac, mixed red, white, and blue.) Length about 36.00; weight about 12–14 lbs.; wing 13.00, tail 9.00, culmen 3.75. *Hab.* Formerly, Bering Island, but now extinct there; possibly still existing in some of the westernmost Aleutian Islands.

—. **P. perspicillatus** PALL. **Pallas's Cormorant.**

FAMILY PELECANIDÆ.—THE PELICANS. (Page 73.)

Genera.

(Characters same as for the Family).................. **Pelecanus.** (Page 81.)

GENUS PELECANUS LINNÆUS. (Page 81, pl. XXI., figs. 1, 2.)

Eggs 1–4, oval, ovate, or elongate-ovate, with rough chalky shell, pure white, but usually much blood-stained.

Species.

*a*¹. Tail-feathers 24; lower jaw densely feathered; color white, with blackish remiges. (Subgenus *Cyrtopelicanus* REICH.[1])

Adult: Entirely white, with quills entirely black, the secondaries also chiefly black. *Nuptial plumage:* Culmen with a median elevated horny ridge, situated a little forward of the middle portion; a pendent occipital crest of white or pale straw-yellow; lanceolate lesser wing-coverts and similarly formed feathers of chest, pale straw-yellow, or, rarely, purplish buff; pouch and bill chiefly reddish (in life), the former paler terminally; feet intense orange-red. *Post-nuptial plumage:* Similar in all respects to the preceding, except that the appendage to culmen and the occipital crest are wanting (having been shed), the latter replaced by a patch of short grayish feathers. *Winter adult:* Plumage as in the preceding, but gray occipital patch wanting, yellowish color of chest and lesser wing-coverts paler, and colors of bill, face, pouch, and feet much less intense, a clear lemon-yellow being the prevailing tint. *Young:* Plumage white, but lesser wing-coverts and feathers of top of head brownish gray centrally, chest-feathers short, blended, and pure white, the bill, pouch, face, and feet pale yellowish. Length about 4½–nearly 6 feet, extent 8½–nearly 10 feet, weight about 17 lbs, wing 20.00–25.25, culmen 11.05–15.00. *Nest* a rude mound or heap of gravel and rubbish, flattened or slightly hollowed on top, on beach or bench usually of island in some lake or large inland body of water. *Eggs* 1–3 or 4, 3.34 × 2.22. *Hab.* Whole of temperate North America, north in the interior to about 61°, south, in winter, as far as Guatemala; rare along Atlantic coast of the United States...... 125. **P. erythrorhynchos** Gmel. **American White Pelican.**

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[1] The typical subgenus (*Pelecanus* proper), having for its type the *P. onocrotalus* of southern Europe, is not represented in America.

a^2. Tail-feathers 22; lower jaw entirely naked; color chiefly grayish mixed with dusky. (Subgenus *Leptopelicanus* Reich.)

Nuptial plumage: Head, and feathers bordering base of gular pouch, all round, white, the top of the former sometimes straw-yellowish; rest of neck rich velvety reddish brown, varying from light reddish chestnut to seal-skin brown, or nearly black; upper part of hind-neck with a more or less distinct crest of chestnut; upper parts silvery gray, the feathers of back, rump, lesser wing-coverts, etc., edged with dark brown, producing a striped or streaked appearance; lower parts dark brownish gray, the sides, etc., streaked with silvery white. *Winter adult:* Similar, but whole head and neck white, except for a straw-yellow tinge on the former and on the lower part of the fore-neck. *Young:* Head and neck light brownish gray, somewhat mottled with paler tips to the feathers; back, wing-coverts, etc., dull brown, the feathers tipped with pale fulvous; lower parts white, tinged with brownish gray laterally and posteriorly.

b^1. Smaller, with pouch always dull greenish dusky or olive-dusky; length about 4–4½ feet, wing 18.50–21.00, culmen 9.40–12.20. *Nest* a slight heap or mound of gravel, etc., on or near sea-beach. *Eggs* 3.01 × 1.95. *Hab.* Coasts and islands of Gulf of Mexico and Caribbean Sea, including West Indies; north, regularly, to North Carolina, accidentally (blown by storm?) to Illinois.
126. **P. fuscus** Linn. **Brown Pelican.**

b^2. Larger, with pouch red during pairing season; length 4½ feet, or more, wing 20.50–23.25, culmen 12.25–14.75. *Hab.* Pacific coast from Washington Territory to western Mexico (perhaps to Panama, or farther).. 127. **P. californicus** Ridgw. **California Brown Pelican.**

FAMILY FREGATIDÆ.—THE MAN-O'-WAR BIRDS. (Page 73.)

Genera.

(Characters same as for the Family)........................ **Fregata.** (Page 82.)

GENUS FREGATA CUVIER. (Page 82, pl. XVIII., fig. 2.)

Species.

a^1. Culmen more than 4.15.

Adult male: Entirely black, the lanceolate scapulars and interscapulars glossed with metallic bottle-green and reddish purple. *Adult female:*

Dull black, the central lesser wing-coverts light grayish brown, the scapulars, etc., only slightly metallic, and not lanceolate; breast and sides whitish. *Young:* Head, neck, breast, and belly, white; otherwise, much as in the adult female. *Downy young:* Covered with very fluffy pure white down. Length 37.50–41.00, wing 22.00–27.10 (24.90), tail 14.25–19.25 (17.73), forked for more than half its length; culmen 4.25–5.15 (4.62). *Nest* a rude structure of sticks on trees or bushes (usually mangroves) along sea-shore. *Eggs* (usually only 1), 2.70 × 1.83, pure white, oval, ovate, or elongate-ovate. *Hab.* Tropical and subtropical seas, chiefly north of the equator; north regularly to Florida, Texas, and California, accidentally to Nova Scotia, Ohio, and Kansas.

128. **F. aquila** (LINN.). **Man-o'-War Bird.**

a^2. Culmen less than 4.15.

In plumage not very obviously different from *F. aquila.* Wing 20.50–25.25 (21.53), tail 15.75–17.10 (16.27), culmen 3.65–4.10 (3.90). *Hab.* Tropical parts of the South Pacific.

F. aquila minor (GMEL.). **Lesser Man-o'-War Bird.**[1]

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[1] *Pelecanus minor* GMEL., S. N. i. 1788, 572. *Fregata minor* RIDGW., in B. B. & R. Water B. N. Am. ii. 1884, 128.

ORDER ANSERES.—THE LAMELLIROSTRAL SWIMMERS. (Page 1.)

Families.

(Characters same as for the Order)........................ **Anatidæ.** (Page 84.)

FAMILY ANATIDÆ.—THE DUCKS, GEESE, AND SWANS. (Page 84.)

Eggs numerous, always unmarked, with a hard and usually smooth shell.

Genera.

- a^1. Neck shorter than body.
  - b^1. Tarsus shorter than middle toe, without claw.
    - c^1. Lower mandible without trace of lamellæ along the side, but with a series of distinct, tooth-like serrations along the upper edge. (Subfamily *Merginæ.*)
      - d^1. Culmen longer than tarsus, and three times, or more, the depth of bill at base.
        - e^1. Serrations of both mandibles very conspicuously tooth-like, and strongly inclined backward at tips. **Merganser.** (Page 88.)
        - e^2. Serrations of both mandibles short, blunt, and not distinctly inclined backward at tips......... **Lophodytes.** (Page 89.)
      - d^2. Culmen shorter than tarsus .... **Mergus.** (Page 90.)
    - c^2. Lower mandible with a very distinct series of lamellæ along the side, in addition to the series along upper edge. (Subfamily *Anatinæ.*)
      - d^1. Lower portion of tarsus in front with a row of transverse scutellæ.
        - e^1. Lores entirely densely feathered; wing less than 12.00.
          - f^1. Tail normal.
            - g^1. Hind-toe without a distinct membraneous lobe.
              - h^1. Bill not spatulate.
                - i^1. Tail-feathers narrow and pointed at tip.
                  - j^1. Tail graduated for less than one-third its total length, or else consisting of only 14 feathers, and culmen shorter than middle toe without claw. **Anas.** (Page 90.)
                  - j^2. Tail graduated for more than one-third its total length, consisting of 16

feathers, and culmen longer than middle toe, without claw.
Dafila. (Page 97.)

i^2. Tail-feathers broad and rounded at tips.
Aix. (Page 98.)

h^2. Bill spatulate (very broad near end and narrow at base).................... **Spatula.** (Page 96.)

g^2. Hind toe with a broad, membraneous lobe. (Subfamily *Fuligulinæ.*)

h^1. Feathering on lores not reaching beyond posterior border of nostril.

i^1. Graduation of tail less than length of bill from nostril.

j^1. Loral feathering with a decidedly convex anterior outline; nail less than one-third as wide as width of bill across middle portion. **Aythya.** (Page 101.)

j^2. Loral feathering with straight or even slightly concave anterior outline; nail more than one-third as wide as bill across middle portion.
Netta. (Page 100.)

i^2. Graduation of tail much more than length of bill from nostril.

j^1. Distance from tip of bill to loral feathering less than graduation of tail.

k^1. Distance from anterior end of nostril to loral feathers equal to or greater than width of bill at base.

l^1. Distance from anterior end of nostril to tip of bill much less than from same point to loral feathers; tail less than twice as long as tarsus.
Glaucionetta. (Page 104.)

l^2. Distance from anterior end of nostril to tip of bill much greater than from same point to loral feathers; tail more than twice as long as tarsus.
Charitonetta. (Page 106.)

k^2. Distance from anterior end of nostril to loral feathering much less than width of bill at base.

l^1. Distance from posterior end of nostril to loral feathers equal to or greater than length of nostril; anterior outline of loral feathering strongly convex.

Histrionicus. (Page 107.)

l^2. Distance from posterior end of nostril to loral feathers less than half the length of the nostril; anterior outline of loral feathering forming a nearly straight line, running obliquely backward and downward from near nostril to corner of mouth.

Clangula. (Page 106.)

j^2. Distance from tip of bill to loral feathering greater than graduation of tail.

k^1. Distance from posterior border of nostril to angle of mouth much less than half the distance from anterior border of nostril to tip of upper mandible.

l^1. Width of bill at base equal to one-half the length of culmen; speculum plain white.

Camptolaimus. (Page 107.)

l^2. Width of bill at base much less than one-half the length of the culmen; speculum dark-colored (steel-blue or violet in male), bordered before and behind by a white bar.

Eniconetta. (Page 107.)

k^2. Distance from posterior border of nostril to angle of mouth equal to or greater than distance from anterior end of nostril to tip of upper mandible.

Oidemia. (Page 110.)

h^2. Feathering of lores reaching anteriorly to or beyond posterior end of nostril, or else tertials falcate, or plumage barred with black and brown.

i^1. Feathering of forehead continuous with that of lores, and advancing quite to the nostril.......... **Arctonetta.** (Page 108.)

*i*². Feathering of forehead separated from that of lores by the interposition of a more or less extensive naked angle, or prolongation of naked skin of the bill. **Somateria.** (Page 108.)

*f*². Tail more than half as long as wing, much graduated, the feathers with narrow webs and very stiff shafts, their bases scarcely hidden by the short coverts.

*g*¹. Nail of bill very small, hardly visible from above, and bent abruptly backward beneath the tip of the upper mandible; outer toe longer than middle. **Erismatura.** (Page 113.)

*g*². Nail of bill normal (*i.e.* large, almost wholly visible from above, and not bent abruptly backward at tip); outer toe shorter than middle. **Nomonyx.** (Page 114.)

*e*². Lores wholly or partially naked; wing more than 12.00. **Cairina.**[1] (Page 100.)

*d*². Lower portion of tarsus in front without transverse scutellæ. **Dendrocygna.** (Page 118.)

*b*². Tarsus longer than middle toe, without claw. (Subfamily *Anserinæ.*)

*c*¹. Serrations on cutting-edge of upper mandible visible from outside for greater portion of the tomium, the latter decidedly sinuated, or concave.

*d*¹. Bill very stout, its depth through base equal to much more than half the length of the culmen; color of adults white, with blackish primaries, or else with head and part of neck white, the wing-coverts plain bluish gray........... **Chen.** (Page 114.)

*d*². Bill weaker and more depressed, its depth through base less than half the length of the culmen; color of adults never white, or with white head, or bluish gray wing-coverts. **Anser.** (Page 115.)

*c*². Serrations on edge of upper mandible visible only near angle of mouth, the tomium very slightly or not at all sinuated.

*d*¹. Nostril near middle of nasal fossæ; cutting-edge of upper mandible not appreciably or regularly sinuated; bill and feet always entirely black; head partially or entirely black; tail-coverts and crissum white............................. **Branta.** (Page 116.)

*d*². Nostril at lower anterior extremity of nasal fossæ; cutting-edge of upper mandible appreciably and regularly sinuated, or concave; bill and feet light-colored; head white (sometimes stained with rusty) in adult; tail-coverts and crissum grayish, barred with dusky and whitish.................. **Philacte.** (Page 118.)

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[1] *Cairina* FLEMING, Phil. of Zool. 1822, 260. Type, *Anas moschata* LINN.

*a*². Neck as long as or longer than body. (Subfamily *Cygninæ.*)

Largest of American *Anatidæ* (length more than three feet); color entirely pure white, with black bill and feet, in adult, grayish in young. **Olor.** (Page 120.)

GENUS **MERGANSER** BRISSON. (Page 84, pl. XXI., fig. 4.)

Species.

COMMON CHARACTERS.—*Adult male* with head and upper neck greenish black, the occiput crested; rump, upper tail-coverts, and tail, plain ash-gray; rest of upper parts mainly pied black and whitish; lower parts rich creamy white or pale salmon-color. *Adult female,* with head and upper neck cinnamon-brownish (occiput crested, as in the male), chin and part of throat white; upper parts grayish, with some white on wings; lower parts buffy white.

*a*¹. Distance between nostril and nearest feathering at base of upper mandible much greater than height of upper mandible at base; feathering at base of upper mandible, on sides, projecting very slightly forward, and not forming a distinct angle.

*b*¹. No visible black bar across white of wing-coverts. *Adult male:* Head and upper neck greenish black, the top of the latter with a soft "bushy" crest, conspicuous only when erected; chest and other lower parts rich creamy white, or (especially in freshly-killed specimens) delicate pale salmon-color; wing 10.70–11.00, culmen 2.05–2.30, tarsus 1.90–2.00, middle toe 2.35–2.60. *Adult female:* Head and upper neck tawny brown or cinnamon, the chin and throat whitish, the occiput with a conspicuous pointed crest; upper parts chiefly ash-gray, with white on secondaries and greater wing-coverts; wing 9.75–10.25, culmen 1.80–1.90, tarsus 1.65–1.80, middle toe 2.35. *Hab.* Northern parts of the eastern hemisphere, from western Europe to Kamtschatka.

M. merganser LINN. **Merganser.**[1]

*b*². A very conspicuous black bar across white of wing-coverts. (Plumage not otherwise essentially different from that of *M. merganser*, but feathering at base of bill having a quite distinct outline.) *Downy young:* Upper half of head, and hind-neck, rusty brown, more reddish on the latter, where encroaching on sides of neck; remaining upper parts hair-brown, relieved by four white spots; lower parts, including rest of head and neck, white; a stripe on lower half of lores, white; beneath this, a narrower stripe of deep brown, and a similar, but broader, brown stripe on upper half of lores. *Male:* Length 25.00–27.00, wing 10.50–11.25, culmen 1.90–2.20, tarsus 1.90–2.00, middle toe 2.40–2.50. *Female:* Length

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[1] *Mergus merganser* LINN., S. N. ed. 10, i. 1758, 129. *Merganser merganser* STEJN., Bull. U. S. Nat. Mus. No. 29, 1885, 176.

21.00–24.00, wing 9.60–9.75, culmen 1.80–2.00, tarsus 1.85–1.90, middle toe 2.25–2.40. *Eggs* 2.63 × 1.82, ovate, or elliptical-ovate, pale buff, or buffy white. *Hab.* Whole of North America, breeding south to northern border of United States.. 129. **M. americanus** (Cass.). **American Merganser.**

a^2. Distance between nostril and nearest feathering on sides of base of upper mandible decidedly less than height of upper mandible at base; feathering on sides of base of upper mandible projecting far forward, and forming a very decided, though obtuse, angle.

Adult male: Head dull greenish black, the occiput with a long pointed crest; neck and sides of chest dull brownish buff, or light cinnamon, streaked with black; other lower parts mainly white, usually tinged with cream- or salmon-color. *Adult female:* Very similar in coloration to the same sex of *M. americanus*, but smaller, and very readily distinguishable by the different position of the nostrils, etc., as noted above. *Downy young:* Above hair-brown, the posterior border of each wing and a large spot on each side of the rump, yellowish white; lower parts, including cheeks, yellowish white; sides of head and neck rusty cinnamon, paler on lores, which are bordered above by a dusky stripe, and beneath by a dark rictal stripe; lower eyelid whitish. Length about 20.00–25.00, wing 8.60–9.00, culmen about 2.50, tarsus 1.80–1.90, middle toe 2.40. *Eggs* ovate or elliptical-ovate, 2.57 × 1.79, light olive-buff. *Hab.* Northern portion of northern hemisphere, breeding northward.

130. **M. serrator** (Linn.). **Red-breasted Merganser.**

Genus **LOPHODYTES** Reichenbach. (Page 84, pl. XXI., fig. 3.)

Species.

Adult male: Head (except crest), neck, and most of upper parts black; crest pure white with a sharply defined black border or rim; lower parts white, the sides of the chest crossed by two black crescentic bars (projected from the black of the back), the sides light cinnamon, finely waved with black. *Adult female:* Head (except crest), neck, chest, and upper parts grayish brown, darker above; crest reddish hair-brown or dull cinnamon, smaller and of looser texture than in the male; chin and upper throat, belly, etc., white. *Young:* Similar to adult female, but crest rudimentary, the sides and under tail-coverts more distinctly brown. *Downy young:* Above deep hair-brown, darkest on back and rump; hinder border of arm-wing, a small spot on each side of back, and one on each side of rump, grayish white; lower half of head brownish buff or light fulvous, paler on chin and throat; chest light dingy brownish, sides darker; belly white. Length about 17.25–19.25, wing 7.50–7.90, culmen 1.50. *Nest* in holes in trees, usually at a considerable height. *Eggs* 6–10, 2.09 × 1.75, broadly oval, white. *Hab.* North America in general; north to Alaska and (accidentally) Greenland; south to Mexico and Cuba; casual in Europe.

131. **L. cucullatus** (Linn.). **Hooded Merganser.**

GENUS **MERGUS** LINNÆUS. (Page 84.)

Species.

Adult male: Prevailing color pure white, but this relieved as follows: A patch covering lores and narrowly surrounding eyes, deep black with a greenish reflection; under portion of crest glossy greenish black; back, rump, some of the wing-coverts, secondaries, and two narrow crescentic bars across sides of chest, deep black; upper tail-coverts and tail ash-gray; length about 16.50, wing 7.75, culmen 1.10. *Adult female:* Upper part of head, including lores, reddish brown; rest of head, with neck (except behind), and lower parts, white; upper parts, sides, and flanks ash-gray, darker on back; chest tinged with pale ashy; smaller than the male, and crest less developed. *Downy young:* "Upper parts, including sides of the head below the eye, but only on the back of the neck, dark blackish brown, darkest on the crown and the lower part of the back; at the base of the wing-joint a white spot, and another close to it, but rather lower down the back, and on each side of the rump another white spot; below the eye a very small white spot; underparts white; breasts and flanks pale grayish or sooty brown." (DRESSER.) *Hab.* Europe, etc.; accidental or occasional in eastern North America (?).

M. albellus LINN. **Smew.**[1]

GENUS **ANAS** LINNÆUS. (Page 84, pl. XXII., figs. 2–5; pl. XXIII., fig. 1.)

Species.

*a*¹. Culmen longer than middle toe, without claw.

*b*¹. Width of upper mandible near tip more than one-third the commissure, the upper and lower outlines of maxilla more or less convex for terminal half.

*c*¹. Wing more than 8.00; scapulars and larger tertials broad, and without light-colored median stripes in adult male. (Subgenus *Anas.*)

*d*¹. Smaller wing-coverts uniform grayish brown or brownish slate; tertials without light edgings; sexes very different in plumage; wing with two distinct white bands.

Adult male: Head and neck soft, brilliant metallic green; chest rich dark chestnut, separated from green of neck by a collar of pure white; speculum rich metallic violet, bordered anteriorly by a black bar, this preceded by a white bar, and posteriorly by a black subterminal and white terminal band. *Adult female* (and *male in breeding season*): Wings as above; elsewhere varied with dusky and ochraceous or buffy, the former on central or median portion of the feathers, and predominating on upper parts, the latter on edges, and prevailing on lower parts. *Downy young:*

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[1] *Mergus albellus* LINN., S. N. ed. 10, i. 1758, 129.

Above olivaceous, relieved by two pairs of yellowish spots, one pair on the back, just behind the wings, the other on each side of the base of the tail; lower parts, including sides of head and broad superciliary stripe, yellowish buff, deepest on head, paler and duller posteriorly; side of head marked by a narrow but very distinct stripe of dark brown, extending from upper basal angle of the maxilla to the eye, and thence to, and confluent with, the olivaceous of the occiput; beneath this stripe an auricular spot of dusky; sides crossed by two olivaceous patches, confluent with the olive of the back. Length about 20.00–25.00, wing 10.25–12.00, culmen 2.00–2.40, tarsus 1.50–1.80, middle toe 1.90–2.15. *Eggs* 2.32 × 1.67, pale olive-buff, pale greenish buff, or pale buffy pea-green. *Hab.* Whole of northern hemisphere.

132. **A. boschas** Linn. **Mallard.**

*d*². Smaller wing-coverts distinctly bordered or margined with buff or ochraceous, and tertials edged with same; sexes alike in plumage.

*e*¹. Wing without any white bands.

*f*¹. Cheeks, chin, and entire throat distinctly streaked with dusky; dusky markings largely predominating in extent over the lighter (buffy or ochraceous); lower basal corner of upper mandible without black spot; speculum usually deep violet. *Downy young:* Above olive-brown, slightly relieved by three pairs of light dull buff spots, as follows: One on posterior border of arm-wing (this sometimes indistinct), one on sides of back, just behind wing, and one on sides of rump, near base of tail; top of head and hind-neck olive-brown, like back, etc.; rest of head and neck, with lower parts, pale dingy buff, paler on belly; sides of head marked with a narrow dusky streak, from upper basal angle of bill to eye and thence back to occiput; a dusky auricular spot, continued less distinctly back to nape. Length 21.00–24.50, wing 10.50–11.50, culmen 2.00–2.35, tarsus 1.70–1.80, middle toe 1.90–2.10. *Eggs* 2.43 × 1.75, pale dull buff or pale greenish buff. *Hab.* Eastern North America, breeding from more northern United States to Hudson's Bay, including whole of Labrador. (Western and southern limits imperfectly determined.)

133. **A. obscura** Gmel. **Black Duck.**

*f*². Cheeks, chin, and throat plain buff; ochraceous or buff markings predominating in extent over the darker markings; lower basal angle of upper mandible with a triangular black spot; speculum usually bluish green; about the size of *A. obscura.* *Eggs* 2.15 × 1.61, pale dull buff or pale grayish buff. *Hab.* Southeastern United States, from Florida to Kansas.

(10.) 134. **A. fulvigula** RIDGW. **Florida Duck.**

e^2. Wing with one or more white bands.

f^1. Wing more than 8.75, with two white bands.

Chin, throat, and lower part of cheeks plain buffy; dusky prevailing on upper parts, lower parts with dusky and ochraceous in about equal proportion; wing 8.90–10.00, culmen 1.85–2.05, tarsus 1.60, middle toe 1.95. *Hab.* Southern Mexico (Puebla, etc.).

A. diazi RIDGW. **Mexican Duck.**[1]

f^2. Wing less than 8.75, with only one white band.

Only the chin and upper part of throat unstreaked buff; dusky and ochraceous markings nearly equal in extent, the latter, however, rather predominating on lower parts; speculum dark metallic green, followed, successively, by a velvety black subterminal and a pure white terminal bar, each about .35 wide; wing 8.50, culmen 1.65, tarsus 1.30, middle toe 1.70. *Hab.* Western Mexico (vicinity of Mazatlan).

A. aberti RIDGW. **Abert's Duck.**[2]

c^2. Wing less than 8.00; scapulars and tertials lanceolate, and marked with buffy or whitish median stripes in adult males. (Lesser wing-coverts plain light bluish, last row of middle coverts white spotted or blotched with dusky, speculum bronzy greenish.) (Subgenus *Querquedula* STEPHENS.)

d^1. Culmen usually less than 1.65. *Adult male:* Head and neck dull plumbeous, with a large crescent-shaped patch of white in front of eye, faint gloss of metallic lavender-purple on sides of occiput, the crown dusky; lower parts pale chestnut, spotted with black. *Adult female* (and *adult male in breeding season*): Above dusky, varied with dull buffy; head, neck, and lower parts dull brownish white, or pale dull buff, the head and neck streaked with dusky (except on chin and upper throat), the lower parts more or less spotted with same, the belly sometimes (especially in younger birds) immaculate. *Young:* Similar to adult female, but whole belly immaculate, and speculum dull grayish brown, without metallic gloss. Length 14.50–16.00, wing

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[1] *Anas diazi* RIDGW., Auk, iii. July, 1886, 332.

[2] *Anas aberti* RIDGW., Proc. U. S. Nat. Mus. i. 1878, 250.

7.00–7.50, culmen 1.40–1.65, tarsus 1.20–1.30, middle toe 1.40–1.45. *Eggs* 1.84 × 1.34, pale buff. *Hab.* North America in general, but chiefly east of Rocky Mountains; in winter, whole of West Indies and Middle America, south to Ecuador.

140. **A. discors** LINN. **Blue-winged Teal.**

d^2. Culmen usually more than 1.65. *Adult male:* Head, neck, and lower parts uniform rich glossy chestnut, the top of head blackish, the belly duller (sometimes blackish). *Adult female* (and *male in breeding season*)*:* Similar to corresponding stage of *A. discors*, but averaging larger (the bill especially), the plumage darker, only the upper throat (sometimes chin only) unstreaked, the belly usually heavily spotted and the breast deeply tinged with light brown. *Young:* Similar to adult female, but markings of lower parts much narrower, streak-like. *Downy young:* Above dark olivaceous, varied by a spot of deep greenish buff on each side of back (behind wings), and a spot of clearer yellowish on each side of rump, at base of tail; top of head and hind-neck similar to back, but darker; forehead, broad superciliary stripe, sides of head and neck, and lower parts generally, deep buff-yellow, the sides of the head marked with a distinct narrow stripe of dark brown. Length about 15.50–17.00, wing 7.20–7.75, culmen 1.65–1.85, tarsus 1.25–1.35, middle toe 1.40–1.50. *Eggs* 1.87 × 1.41, pale buff. *Hab.* Western America, from the Columbia River to Chili, Argentine Republic, and Falkland Islands; east, casually or irregularly, to Mississippi Valley (Louisiana, Illinois, Nebraska, etc.).

141. **A. cyanoptera** VIEILL. **Cinnamon Teal.**

b^2. Width of upper mandible near tip less than one-third the length of the commissure, the upper and lower outlines straight for terminal half. (Wing less than 8.00.) (Subgenus *Nettion* KAUP.)

c^1. *Adult male:* A broad white bar across side of breast; inner webs of outermost scapulars vermiculated with dusky and whitish, the outer webs with a longitudinal spot of black, bordered internally by a white line; head and upper neck chestnut-rufous, varied by a broad patch of bright metallic green from eye backward, this bordered beneath by a line of pale buffy or whitish; a similar line on each side of forehead, continued backward, less distinctly, along upper edge of the green patch; a short tuft or "mane" of bluish black on upper hind-neck; chin and upper throat dull black; lower neck, upper back, scapulars, sides, and flanks, delicately waved with black and white; speculum bright metallic green, the lower feathers black, tipped with white; lower tail-coverts black medially, with a cream-colored patch on each side. *Adult female:* Wing much as in adult male; upper parts grayish dusky, varied by dull buffy edgings and bars; head, neck, and lower parts brownish white, the head and neck speckled with dusky, the markings enlarged and aggregated on pileum so as to form the prevailing color, and also along upper border of auricular region, producing a more or less distinct postocular stripe; crop, sides, and flanks heavily spotted with dusky; belly sometimes plain whitish, but usually (?) speckled. *Young male:* Similar to adult female, but entire belly and sides immaculate white. *Downy young:* Above grayish brown, with a light grayish buff spot on each side of back and a similar pair on rump; wings crossed near end by a light grayish buff bar; head, neck, and lower parts dull light buff, the pileum and nape grayish brown, darker on top of head, where scarcely reaching the forehead; a dusky postocular streak, and an oblong dusky auricular spot. Length 12.50–15.00, wing 6.25–7.40, culmen 1.40–1.60, tarsus 1.25, middle toe 1.30–1.35. *Eggs* 1.75 × 1.28, pale dull buff. *Hab.* Whole of North America, breeding chiefly north of the United States, in winter, south to Honduras and Cuba.

139. **A. carolinensis** GMEL. **Green-winged Teal.**

*c*². *Adult male:* Similar to corresponding stage of *A. carolinensis*, but no white bar on side of breast, black and whitish undulations of sides, etc., much coarser, inner webs of outermost scapulars wholly and outer webs partly white, the exposed portion of outer webs mostly black; other plumages not distinguishable with certainty from corresponding stages of *A. carolinensis* (?); size about the same as *A. carolinensis*. *Eggs* 1.76 × 1.30, pale dull buff. *Hab.* Northern portions of eastern hemisphere; occasional in eastern North America.

138. **A. crecca** LINN. **European Teal.**

*a*². Culmen shorter than middle toe, without claw.

*b*¹. Distance from anterior border of nostril to tip of upper mandible more than three times the distance from same point to nearest loral feathers; lamellæ numerous, fine, more than 30 being visible from outside; tail-feathers 16. (Subgenus *Chaulelasmus* BONAPARTE.)

Adult male: Head and neck pale brownish or whitish, thickly speckled with black; top of head sometimes plain light brown; crop varied with crescentic bars of white and black, the latter predominating; sides, back, and scapulars finely undulated with slate-color and white; many of the longer scapulars plain brownish gray, broadly edged with paler; middle wing-covert region bright chestnut, the anterior lesser coverts brownish gray, and the posterior ones deep black, the last row deep velvety black; speculum white, the lower feathers ashy, narrowly tipped with white; crissum and upper tail-coverts deep velvety black; bill bluish black, iris brown, legs and feet dull orange-yellow, the webs dusky. *Adult male in breeding season:* Similar to the winter male, but colors duller, crown dusky, rump and breast tinged with rusty, and under parts more spotted with dusky. *Adult female:* Colors chiefly brownish dusky and brownish white, in longitudinal streaks on head and neck and in irregular transverse spots and bars on other portions; the dusky predominating above, the white below; wing nearly as in the male, but the chestnut absent or barely indicated, and the gray of the wing-coverts more or less barred and tipped with white; belly and lower part of breast pure white, throat finely streaked with dusky. *Downy young:* Above dull dark brownish, with a spot of sulphur-yellow on each side of rump and back of each wing, the wings also marked with this color; "forehead, space round the eye, throat, and chest pale sulphur-yellow; abdomen white, shaded with sulphur-yellow, on the lower part sooty gray." (DRESSER.) *Male:* Length 19.25–21.75, wing 10.25–11.00, culmen 1.60–1.75, tarsus 1.45–1.70, middle toe 1.80–1.90. *Female:* Length about 18.00, wing 10.00–10.25, culmen 1.55–1.65, tarsus 1.60, middle toe 1.75–1.80. *Eggs* 2.09 × 1.57, pale buff or buffy white. *Hab.* Northern hemisphere in general, breeding in temperate regions.

135. **A. strepera** LINN. **Gadwall.**

b^2. Distance from anterior border of nostril to tip of upper mandible less than three times the distance from the same point to nearest feathers of lores; lamellæ coarser, less than 15 being visible from outside; tail-feathers 14, the tail much graduated. (*Adult males* with forehead and fore part of crown, posterior half of middle wing-covert region, and belly, plain white; speculum metallic green anteriorly, velvety black posteriorly; crop plain vinaceous; sides, flanks, scapulars, and back, delicately waved with dusky upon a paler ground; under tail-coverts plain black.) (Subgenus *Mareca* STEPHENS.)

c^1. *Adult male in winter:* Head and upper neck plain rufous, the forehead varying from white to ochraceous; crop and sides of breast vinaceous; sides, flanks, and whole back white, waved with blackish. *Male after breeding season:* "Head and neck as in the old female; back, scapulars, lesser wing-coverts, and wing dark ashy blackish gray; the fore parts of the back with indistinct whitish vermiculations, the rest of the back and scapulars edged with fulvous; wings as in winter dress; but the larger coverts are ashy blue-gray, not white, the median coverts being darker with rather lighter edges; tail as in the winter dress; underparts white; the upper part of the breast and flanks rusty brown; under tail-coverts white with a grayish tinge, and having large blackish brown central blotches." (DRESSER.) *Adult female:* Head and upper neck pale rusty, speckled and barred with dusky, especially on crown; upper parts dusky brown, the feathers edged and more or less barred with pale brown and whitish; white patch on wing-coverts merely indicated by white tips to feathers; speculum grayish, without lustre; crop, sides, and flanks indistinctly barred with grayish brown, and dull light rufous, or fulvous; rest of lower parts white, the lower tail-coverts barred with brown. *Young male:* Similar to adult female, but more richly colored. Length 18.00–20.00, wing 10.00–11.00, culmen 1.35–1.45, tarsus 1.45–1.60. *Eggs* 2.23 × 1.53, pale buff. *Hab.* Northern portions of eastern hemisphere; occasional in eastern North America, and frequent in Alaska.

136. **A. penelope** LINN. **Widgeon.**

c². *Adult male:* Head and upper neck whitish, thickly flecked (except on forehead and part of crown) with blackish, the former ornamented on each side by a broad space of bright metallic green, extending from eye to occiput; crop, sides, and flanks vinaceous, all except the first waved with black; back and scapulars grayish white (usually tinged with vinaceous) waved with black. *Adult female:* Head and neck dull whitish, streaked with dusky; crop, sides, and flanks dull vinaceous; upper parts dusky grayish brown, irregularly and coarsely barred with dull white, or buffy; smaller wing-coverts dull dark grayish, tipped and edged with white. *Young male:* Similar to adult female, but colors more pronounced and pattern better defined, especially the wing-markings. *Downy young:* Above dark olive-brown, relieved by a spot of greenish buff on posterior border of each wing, one on each side of back, and one on each side of rump; top of head and hind-neck, dark olive, like back; rest of head and neck, with lower parts, pale olive-buff or fulvous, the side of the head with a dusky streak, extending from bill, through eye, to occiput. Length 18.00–22.00, wing 10.25–11.00, culmen 1.30–1.50, tarsus 1.45–1.65. *Eggs* 2.06 × 1.48, pale buff. *Hab.* North America in general, breeding chiefly north of the United States; south, in winter, to Guatemala and Cuba.

137. **A. americana** GMEL. **Baldpate.**

GENUS **SPATULA** BOIE. (Page 85, pl. XXIII., fig. 3.)

Species.

Adult male: Head and neck dark metallic bluish green; breast and outer scapulars white, the former sometimes spotted with dusky; rest of lower parts uniform chestnut, the crissum dark metallic bluish green, bordered anteriorly by a band of finely undulated grayish white; wing-coverts light grayish blue, the last row tipped with white, forming a narrow band across the wing; speculum bright metallic green, very narrowly tipped with white; bill deep black, iris bright yellow, and feet rich orange-red in life. *Adult female:* Wings as in the male, but colors rather duller; rest of plumage grayish brown, varied with brownish white, above, the head and neck brownish white, streaked with dusky, the lower parts similar but spotted instead of streaked; bill brown, the mandible orange; iris and feet as in the male. *Young male:* Similar to the adult female, but colors richer, the abdomen tinged with chestnut. *Young female:* Similar to the adult, but wing-coverts dull slate-gray with little or no blue tinge, the speculum dusky, faintly glossed with green, and rather broadly tipped with brownish white. *Downy young:* Above grayish brown, with a brownish white spot on each side of back, and a corresponding pair on the rump; pileum darker brown than nape; rest of head and neck, with entire lower parts, pale grayish fulvous, or dull pale buff, shaded with grayish across jugulum; side of head with a dark brown stripe, from upper posterior angle of bill to eye, and thence back about half way to occiput; beneath this a similar stripe crossing auriculars and extending back towards nape. Length 17.00–21.00, wing 9.00–10.00, culmen 2.60–2.90, width of bill at end 1.10–1.20, at base .60, tarsus 1.40–1.50. *Eggs* 2.12 × 1.48, pale olive-buff or brownish buff. *Hab.* Northern hemisphere in general, breeding chiefly northward.

142. **S. clypeata** (Linn.). **Shoveller.**

Genus **DAFILA** Stephens. (Page 85, pl. XXIII., fig. 4.)

Species.

*a*¹. Lower half of head plain brown (male) or dull whitish streaked with dusky (female); tail dusky or grayish, the feathers (except middle pair) with paler edges; lower parts white, sometimes streaked, but never spotted, with dusky; secondaries narrowly tipped with white or buffy; bill lead-color with black stripe on culmen (in male) or entirely dusky (female). (Subgenus *Dafila.*)

Adult male: Head and upper neck plain hair-brown, darker on crown, and faintly glossed on sides of occiput with metallic green and purple; upper half of hind-neck black, with a white stripe on each side, confluent with the white of the crop and other lower parts; back, sides, and flanks finely waved with white and dusky; longer scapulars velvety black, edged with whitish; tertials silvery gray, marked with a velvety black median stripe; speculum varying from dull metallic green to bronzy purple, tipped with white, and crossed by a subterminal bar of velvety black; wing-coverts uniform brownish gray, the last row broadly tipped with cinnamon, producing a distinct bar; length about 26.00–30.00, wing 10.25–11.20, middle tail-feathers 7.25–9.50, culmen 1.85–2.15, tarsus 1.55–1.85. *Adult female:* Above grayish dusky, varied with irregular bars of yellowish white or pale ochraceous, these markings often U-shaped; wing much as in the male, but colors duller, the smaller coverts tipped with whitish; head and neck dingy whitish, everywhere streaked, except sometimes on throat, with blackish; lower parts chiefly white, the flanks and under tail-coverts streaked with dusky; length 21.00–23.50, wing 9.60–10.10, middle tail-feathers 4.50–5.00, culmen 1.80–2.10, tarsus 1.65. *Male in breeding plumage:* Similar to adult female, but wings as in spring and winter plumage. *Young male:* Similar to adult female, but markings on upper parts more transverse, and belly sometimes (always ?) streaked with dusky. *Young female:* Similar to young male, but speculum pale brownish, more or less marked with dusky anteriorly; lower parts everywhere thickly streaked with dusky. *Downy* *young:* Above grayish olive, with a dull white stripe along each side of back, a white space on wing, and a yellowish white superciliary stripe; below grayish white tinged with sulphur-yellow (this deeper in younger individuals); a brown stripe behind each eye, and an indistinct spot of same over ears. *Eggs* 2.21 × 1.47, varying from pale brownish buff to pale grayish green. *Hab.* Northern hemisphere in general; in North America, breeding from northern United States northward, and wintering south to Cuba and Panama........... 143. **D. acuta** (LINN.). **Pintail.**

*a*². Lower half of head, with upper fore-neck, plain white; tail creamy buff, fading into white at tip; lower parts buff, marked everywhere with roundish spots of black, largest on sides; secondaries very broadly tipped with buff; basal half of bill, on sides, pale-colored (rose-red in life); sexes alike. (Subgenus *Poecilonetta* EYTON.[1])

D. bahamensis (LINN.). **Bahama Pintail.**[2]

GENUS AIX BOIE. (Page 85, pl. XXIII., fig. 5.)

Species.

COMMON CHARACTERS.—*Adult males* with the plumage strikingly variegated with boldly contrasted and brilliant colors; head varied with rich metallic green and purple and pure white; chest rich purplish chestnut; sides of breast crossed by a broad bar of pure white immediately followed by one of velvety black; sides and flanks buffy, delicately waved with black, the tips of the broad outermost feathers broadly barred with purest white and most intense black; belly white; upper parts varied with velvety black and various metallic hues, the outer webs of the primaries hoary, passing into white at tips. *Adult females* with head plumbeous or brownish gray, varied with white; chest brownish, spotted with white; upper parts without black, but with much metallic purple.

*a*¹. Feathering at base of upper mandible extending much farther forward below than above, the upper basal portion of the mandible forming a very deep angle between the feathering of the forehead and that of the lores; depth of bill at base much greater than its width; feathers on sides of head and neck short and velvety; innermost tertial of normal form; tail half as long as the wing, graduated, the feathers very broad, and extending far beyond the coverts. (Subgenus *Aix.*)

Adult male: Head metallic green, purple, and violet relieved by a pure white line extending backward from the angle of the upper mandible along each side of the crown and upper border of the crest; another from behind the eye backward along the lower edge of the crest, and two much broader transverse bars crossing the cheeks and side of neck, respectively, and confluent with a white throat-patch; upper parts chiefly velvety black, varied with metallic tints of bronze, purple, blue, and green; chest rich chestnut glossed with reddish purple, and marked with triangular white spots; sides of breast crossed with a broad pure white bar and a broad deep black one immediately behind it; sides and flanks delicately waved with black on a buff or pale fulvous ground, the outermost feathers beautifully ornamented with broad crescentic bars of pure white and velvety black; belly white; bill (in life) beautifully varied with jet-black, milk-white, lilac, red, orange, and yellow; length about 19.00–20.50, wing 9.00–9.50, culmen 1.40. *Adult female:* Feathers round base of bill, around eye (and extending thence back to the occiput), chin, and whole throat, white; rest of head leaden gray, the crown and slightly developed occipital crest glossed with greenish; chest brownish, spotted with buff or whitish; remaining lower parts chiefly white; upper parts chiefly grayish brown, richly glossed on wings, scapulars, etc., with reddish purple and other metallic tints; length about 17.00–19.50. *Downy young:* Above dark hair-brown, darker, or approaching clove-brown, on top of head and tail; a dingy whitish bar along posterior edge of arm-wing, and a roundish spot of same on each side of rump; lores, superciliary stripe, and sides of head generally, bright sulphury buff, crossed by a broad stripe of blackish brown, from eye to occiput; lower parts dingy white, the sides more brownish, crossed on flanks by a whitish bar. *Nest* in holes in trees, often at a great height from the ground. *Eggs* 2.08 × 1.58, pale buff, or buffy white. *Hab.* Whole of temperate North America; Cuba; accidental in Europe.

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[1] *Poecilonetta* EYTON, Monog. Anat. 1838, 116. Type, *Anas bahamensis* LINN.

[2] *Anas bahamensis* LINN., S. N. ed. 10, i. 1758, 224. *Dafila bahamensis* GRAY, Gen. B. iii. 1849, 615.

144. **A. sponsa** (Linn.). **Wood Duck.**

*a*². Feathering at base of bill extending farther forward above than below, and forming a straight line from the side of the forehead to the lower basal corner of the mandible; depth of bill at base not greater than its width; feathers on side of neck (in adult male) much elongated, forming a conspicuous ruff of soft narrow feathers; innermost tertial with the shaft much bent, giving the outer web of falcate form, the inner (upper) web widened into an excessively broad sail-like ornament; tail much less than half as long as wing, nearly even, and shorter than the lower coverts. (Subgenus *Dendronessa* Swainson.[1])

Adult male: Smaller than *A. sponsa;* similar in general style of coloration, but middle upper portion of crest chestnut, lengthened feathers of sides of neck tawny chestnut, streaked with ochraceous, whole loral region buff, etc. *Hab.* Eastern Asia (domesticated extensively in China and Japan).

A. galericulata (Linn.). **Mandarin Duck.**[2]

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[1] *Dendronessa* Swains., F. B. A. ii. 1831, 497. Type, *Anas galericulata* Linn.

[2] *Anas galericulata* Linn., S. N. ed. 10, i. 1758, 128. *Aix galericulata* "Eyton, Mon. Anat. 1838."

GENUS CAIRINA FLEMING.[1] (Page 87.)

Species.

Adult male: Head, neck, and lower parts, uniform glossy brownish black; upper parts brilliant metallic blackish green, glossed with purple anteriorly and on rump; wing-coverts, above and below, entirely pure white; caruncles along sides of forehead, etc., bright pinkish red, or rose-red, in life; bill varied with blackish and pinkish white or light rose-color; length nearly 3 feet, wing about 16.00, tail 9.00, tarsus 2.00, or more. *Adult female:* Entirely brownish black, except some of the upper greater wing-coverts, which are white; upper parts glossed with metallic green and purple; length about 2 feet, wing 12.50, tail 5.50, tarsus 2.00. *Hab.* Tropical America, from Paraguay and southern Brazil to Mexico; Louisiana?

C. moschata (LINN.). **Muscovy Duck.**[2]

GENUS NETTA KAUP. (Page 85, pl. XXIII., fig. 2.)

Species.

Adult male: Head and upper neck vinaceous-rufous, the full, soft, "bushy" crest paler, and more ochraceous; lower neck, stripe along hind-neck, most of the lower parts, and rump, uniform brownish black; back and scapulars light brown, with a broad transverse bar, or patch, on outer portion of scapular region; speculum chiefly white; anterior border and under side of wing, and a very large patch on flanks, white; bill and feet bright vermilion-red in life; length about 21.00, wing 10.20, culmen 2.00. *Adult female:* Crest much smaller than in male; upper half of head and stripe down hind-neck, light hair-brown; rest of head and neck, with lower parts in general, pale grayish, the chest and sides more brownish; rump dark brownish; no white scapular patch, and white anterior border to wing indistinct; bill dusky or brownish, the tip paler (pinkish in life); wing 9.90, culmen 1.90. *Immature male:* Much like the adult female, but crest still less developed, and more reddish; under part and sides of head interspersed with cinnamon-colored feathers; breast, etc., mixed with black feathers; white scapular patch distinctly indicated. *Downy young:* Upper parts dull olive-gray, lower parts and scapular spot pale yellowish gray; lores with two olive-gray stripes, one ascending over eye, and bordering a yellowish gray superciliary stripe, the other passing below the eye, across cheeks and ear-coverts. *Eggs* 2.19 × 1.68, pale olive-buff. *Hab.* Southern and eastern Europe, together with portions of Africa and Asia; accidental in eastern United States (Fulton Market, New York City).

145. **N. rufina** (PALL.). **Rufous-crested Duck.**

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[1] *Cairina* "FLEMING, Phil. of Zool. 1822, 260." Type, *Anas moschata* LINN.

[2] *Anas moschata* LINN., S. N. ed. 10, i. 1758, 124. *Cairina moschata* "FLEM., Philos. Zool. 1822, 260."

GENUS **AYTHYA** BOIE. (Page 85, pl. XXIV., figs. 1-3.)

Species.

COMMON CHARACTERS.—*Adult males* with the head and part of the neck uniform chestnut or black, the lower neck uniform black (except in a few exotic species); back and scapulars waved with white and black; speculum bluish gray, or white, tipped with black; lower parts white. *Adult females* with head, neck, chest, and upper parts plain brownish, the head paler or whitish next the bill; speculum as in the male.

*a*¹. Culmen longer than inner toe, with claw; bill not wider near end than at base; head and neck reddish in adult males.

*b*¹. Bill much shorter than middle toe without claw, its greatest width nearly half the length of the culmen, the end moderately depressed, and the nail decidedly hooked. (Subgenus *Aythya*.)

*c*¹. *Adult male:* Head and upper half of neck rich chestnut-red, glossed with reddish purple; lower neck, chest, upper back, rump, and tail-coverts (above and below) black; back, scapulars, sides, and flanks waved or vermiculated with white and black, in nearly equal proportion; belly immaculate white. *Adult female:* Head and neck grayish brown, darker above, the fore part of the former lighter, almost white on chin and upper throat; back, scapulars, chest, sides, and flanks dull grayish brown, the feathers tipped with paler, or fulvous. *Downy young:* Above ochraceous olive-brown, with an indistinct yellowish spot behind each wing, another on the hind border of the arm-wing, and a third on each side of the rump; whole sides of head and neck, with lower parts in general, deep buff-yellow, paler and duller on belly and ventral region; no dark markings on side of head. Length 17.00–21.00, wing 8.50–9.25, culmen 2.05–2.25, greatest width of bill .75–.85. *Eggs* 2.42 × 1.73, pale olive-buff or pale dull greenish buff. *Hab.* Whole of North America, breeding from Maine and California northward.

146. **A. americana** (EYT.). **Redhead.**

*c*². *Adult male:* Head and whole neck chestnut-rufous, without distinct purple gloss; back, scapulars, and whole lower parts, except chest and under tail-coverts, white, *everywhere* finely waved or vermiculated with dusky; otherwise like *A. americana*, but upper mandible (in life) pale blue only between nostril and end, the basal portion being dusky. *Adult female:* Differing from the same sex of *A. americana* chiefly in the color of the bill (hardly appreciable in dried specimens) and in the different proportions. Wing 8.00–8.50, culmen 2.20–2.40, greatest width of bill .70–.78. *Hab.* Europe, with portions of Africa and Asia. **A. ferina** (LINN.). **Pochard.**[1]

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[1] *Anas ferina* LINN., S. N. ed. 10, i. 1758, 126. *Aythya ferina* BOIE, Isis, 1822, 564.

b^2. Culmen as long as middle toe, without claw, its greatest width not more than one-third the length of the culmen; the end much flattened, and nail very slightly hooked. (Subgenus *Aristonetta* Baird.[1])

Adult male: Head and neck reddish brown, the former blackish on top; chest, upper back, lower rump, and upper and under tail-coverts, black; rest of plumage (except quills, etc.) white, the upper parts, sides, flanks, and ventral region, finely waved or vermiculated with dusky. *Adult female:* Head, neck, chest, and upper back, raw-umber brown, the fore part of the head and fore-neck whitish; scapulars, sides, and flanks similar, but tips of the feathers vermiculated with whitish. Length about 20.00–23.50, wing 8.75–9.25, culmen 2.10–2.50, greatest depth of bill .75–.80. *Eggs* 2.48 × 1.76, pale grayish drab or very pale grayish olive-green. *Hab.* Whole of North America, breeding far northward.

147. **A. vallisneria** (Wils.). **Canvas-back.**

a^2. Culmen shorter than inner toe, with claw; bill wider at end than at base; head and neck black in adult males. (Subgenus *Fuligula* Stephens.)

b^1. Speculum white, tipped with black.

c^1. Back and scapulars in adult male grayish white irregularly waved or zigzagged with black; no pendent crest on occiput.

d^1. Flanks immaculate white.

e^1. Six inner quills with a distinct white space on the inner web. *Adult male:* Head, neck, and chest uniform black, the first with a greenish gloss; wing-coverts dusky, "grizzled" with grayish white; bill (in life) pale grayish blue, or bluish white, with black nail. *Adult male at end of breeding season:* "Plumage resembling that of the female, but the brown on the head and neck is blackish brown, the back is more barred with dirty white, the beak is lighter blue, and the eyes richer yellow." (Dresser.) *Adult female:* Head and neck snuff-brown, the former white round base of bill; chest, ventral region, and lower tail-coverts pale grayish brown, fading into white on belly, etc.; sides and flanks deeper brown; upper parts nearly plain brownish dusky, the wings much as in the male. *Downy young:* "Crown, nape, and upper parts uniform dark olive-brown; throat, sides of the head, and fore part of the neck, yellowish white; a dull grayish band crosses the lower neck, rest of the under parts dull yellowish, the flanks grayish yellow." (Dresser.) Length 18.00–20.00, wing 8.25–8.50 (8.42), culmen 1.95–2.05 (2.00), greatest width of bill .90–1.00

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[1] *Aristonetta* Baird, B. N. Am. 1858, 793. Type, *Anas vallisneria* Wils. This subgenus, which was unanimously accepted by the A. O. U. Committee, was accidentally omitted from the Check List.

(.95), least width .70–.85 (.78). *Hab.* Northern portions of Old World, from western Europe to Kamtschatka.

A. marila (Linn.). **Scaup Duck.**[1]

e^2. Six inner quills without distinct white spaces on inner webs; otherwise not appreciably different from *A. marila;* length 18.00–20.00, wing 8.25–9.00 (8.63), culmen 1.85–2.20 (2.03), greatest width of bill .85–1.05 (.97), least width .70–.90 (.79). *Eggs* 2.54 × 1.71, pale buffy olive-gray. *Hab.* North America in general, breeding far northward; south, in winter, to Guatemala.

148. **A. marila nearctica** Stejn. **American Scaup Duck.**

d^2. Flanks vermiculated or zigzagged with blackish.

e^1. Similar to *A. marila nearctica* (including absence of distinct white spaces on six inner quills), but black of head in male glossed with purplish instead of green; length 15.00–16.50, wing 7.50–8.25 (7.81), culmen 1.58–1.90 (1.75), greatest width of bill .80–.95 (.89), least width .60–.78 (.69). *Eggs* 2.25 × 1.58, same color as in *F. marila nearctica. Hab.* North America in general, breeding northward; south, in winter, to Guatemala and West Indies.

149. **A. affinis** (Eyt.). **Lesser Scaup Duck.**

e^2. Similar to *A. affinis*, but six inner quills with a distinct white space on inner webs, as in *A. marila. Hab.* Eastern Asia (Japan and southward).

A. affinis mariloides (Vig.). **Chinese Scaup Duck.**[2]

c^1. Back and scapulars, in adult male, black, sometimes minutely sprinkled with whitish; a long, pendent occipital crest.

Otherwise, in color, much like *A. marila;* wing 7.60–8.10, culmen 1.85–1.90, greatest width of bill .75–.85. *Hab.* Northern parts of Old World, from western Europe to Kamtschatka.

A. fuligula (Linn.). **Crested Scaup Duck.**[3]

b^2. Speculum bluish gray.

Adult male: Head, neck, chest, under tail-coverts, and upper parts black, the head with a violet-purple gloss, and middle of neck with a more or less distinct collar of chestnut; chin with a triangular white spot; bill transversely banded with black, grayish white, and plumbeous. *Adult female:*[4]

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[1] *Anas marila* Linn., Faun. Suec. 2d ed. 1761, 39. *Aythya marila* Boie, Isis, 1822, 564.

[2] *Fuligula mariloides* Vig., Zool. Blossom, 1839, 31 (in text). *Aythya affinis mariloides* Stejn., Orn. Expl. Kamts. 1885, 161.

[3] *Anas fuligula* Linn., S. N. ed. 10, i. 1758, 128. *Aythya fuligula* Stejn., Bull. U. S. Nat. Mus. No. 29, 1885, 160.

[4] The female of this species resembles very closely in coloration that of the Red-head (*A. americana*), but may be readily distinguished by the very different proportions, the average measurements of the two being about as follows:

A. americana. Wing 8.50, culmen 1.90, greatest width of bill .85, least width .75, tarsus 1.60, middle toe 2.30.

A. collaris. Wing 7.50, culmen 1.80, greatest width of bill .85, least width .65, tarsus 1.35, middle toe 2.00.

Top of head and back of neck dark brown, rest of head and neck paler, becoming nearly or quite white anteriorly and on throat; chest, sides, and flanks deep fulvous brown; breast and belly white; upper parts nearly uniform dull dark brown, the speculum bluish gray, as in the male. *Downy young:* Above grayish brown, relieved by seven spots of light buff, as follows: A small spot in middle of upper back, a large patch on each side of back, another on each side of rump, and a bar across hinder border of each wing; top of head and hind-neck deep grayish brown; rest of head and neck, including forehead, with lower parts, light dingy buff, the flanks crossed by a brown transverse patch; side of head without any markings, except a spot of grayish brown on ear-coverts. Length 15.50–18.00, culmen 1.75–2.00, tarsus 1.30–1.45, middle toe 2.00–2.15. *Eggs* 2.23 × 1.57, same color as in *nearctica* and *affinis*. *Hab.* North America in general, breeding northward; south, in winter, to Guatemala and West Indies.

150. **A. collaris** (Donov.). **Ring-necked Duck.**

GENUS GLAUCIONETTA STEJNEGER. (Page 85, pl. XXIV., fig. 4.)

Species.

COMMON CHARACTERS.—*Adult males* with head and upper neck black, glossed with green, blue, or violet, and relieved by a white patch between bill and eye; upper parts pied black and white, lower parts entirely white, the flanks streaked with black. *Females* with head and upper neck brown, chest and part of upper surface grayish, collar round neck and most of lower parts white; wing dusky, with white on wing-coverts and secondaries. *Young males* similar to adult females, but white loral spot of adult more or less distinctly indicated, and gray of chest less extensive (sometimes quite obsolete). *Male in post-nuptial plumage:* Similar to young male, but wing-coverts more continuously white.

a^1. Height of upper mandible at base, measured from point of frontal angle to nearest point on cutting-edge, less than distance from anterior edge of loral feathering to anterior end of nostril, and usually little if any greater than distance from latter point to tip of upper mandible. *Adult male:* Head and upper neck glossy greenish black, with a large roundish or oval spot of white on lower part of lores; white wing-patch uninterrupted by black bands or bars. *Adult female:* Brown of head (usually deep hair-brown or grayish umber) reaching down only to upper part of neck, and not so far in front as elsewhere; gray of chest narrower, usually less deep, and white collar broader; greater wing-coverts usually without distinct blackish tips; nail of bill not more than .20 wide. *Downy young:* Upper parts, including upper half of head, to below eyes, broad band across chest, sides, and thighs, uniform deep sooty brown, lighter and more grayish on chest, the upper parts varied by about eight white spots; chin, throat, and cheeks pure white, in abrupt and decided contrast with the circumjacent brown; remaining lower parts (except chest) grayish white.

b^1. Smaller, with relatively smaller bill. *Male:* Length about 18.00, wing 8.00–9.00 (8.52), bill from tip to extremity of frontal angle 1.65–1.80 (1.73), depth of bill at base .95–1.05 (.99), width .70–.75 (.74), width of nail .18–.20, tarsus 1.30–1.55 (1.43), middle toe 2.15–2.30 (2.22). *Female:* Wing 7.40–8.00 (7.72), bill from tip to frontal angle 1.40–1.60 (1.50), depth at base .75–.85 (.81), width .60–.68 (.65), width of nail .18, tarsus 1.10–1.45 (1.32), middle toe 1.80–2.45 (2.05). *Hab.* Northern portions of eastern hemisphere.

G. clangula (LINN.). **Golden-eye.**[1]

b^2. Larger, with relatively larger bill. *Male:* Length 18.50–23.00, wing 9.00–9.30 (9.18), bill from tip to extremity of frontal angle 1.85–2.05 (1.95), depth at base 1.00–1.10 (1.03), width .82–.85 (.84), width of nail .25, tarsus 1.50–1.60 (1.57), middle toe 2.40–2.60 (2.45). *Female:* Length about 16.50, wing 7.90–8.30 (8.14), bill from tip to frontal angle 1.60–1.75 (1.64), depth at base .85–.90 (.89), width .70, width of nail .20, tarsus 1.40–1.48 (1.44), middle toe 2.05–2.20 (2.12). *Eggs* 2.38 × 1.71, dull light pea-green, occasionally ranging to dull pale olive-buffy. *Hab.* North America generally, breeding from Maine and Canada northward; in winter, south to Cuba and Mexico.

151. **G. clangula americana** (BONAP.). **American Golden-eye.**

a^2. Height of upper mandible at base, measured from extremity of frontal angle to nearest point on cutting-edge, equal to distance from anterior point of loral feathering to anterior end of nostril, and much greater than from latter point to tip of upper mandible.

Adult male: Head and upper neck glossy blue-black, with a large vertical wedge-shaped patch of white across lores; white wing-patch crossed by a broad bar or band of black; length 21.00–23.00, wing 9.00–9.40 (9.17), bill from tip to frontal angle 1.65–1.80 (1.75), depth at base .95–1.10 (1.03), width .75–.85 (.81), width of nail .35, tarsus 1.50–1.60 (1.57), middle toe 2.45–2.50 (2.47). *Adult female:* Brown of head (usually a deep sepia or purplish snuff-brown), descending to middle of neck, all round; gray of chest broader, and usually deeper, and white collar narrower, than in same sex of *G. clangula;* greater wing-coverts always (?) distinctly tipped with blackish; nail of bill not less than .23 wide; wing 8.25–8.75 (8.46), bill from tip to frontal angle 1.40–1.70 (1.56), depth at base .80–.95 (.88), width .70–.80 (.73), width of nail .23–.30 (.26), tarsus 1.30–1.60 (1.46), middle toe 2.10–2.25 (2.19). *Eggs* 2.47 × 1.77, dull pea-green or pale grayish pea-green. *Hab.* Northern North America, breeding from Gulf of St. Lawrence and Rocky Mountains of Colorado northward; Greenland; Iceland; south, in winter, to New York, Illinois, Utah, etc.; accidental or occasional in Europe.

152. **G. islandica** (GMEL.). **Barrow's Golden-eye.**

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[1] *Anas clangula* LINN., S. N. ed. 10, i. 1758, 125. *Glaucionetta clangula* STEJN., Proc. U. S. Nat. Mus. vii. 1885, 409.

GENUS **CHARITONETTA** STEJNEGER. (Page 85, pl. XXIV., fig. 5.)

Species.

Adult male: Head and upper neck rich silky dark metallic green, bronze, and violet-purple, with a large patch of pure white extending from behind the eye to and across the occiput; lower neck, lower parts, wing-coverts, secondaries, and outer scapulars, pure white; upper parts, except as described, black; length 14.25–15.25, wing 6.75–6.90, culmen 1.10–1.15. *Adult female:* Head, neck, and upper parts generally dusky grayish brown; a spot on ear-coverts, inner secondaries, and sometimes a portion of the greater wing-coverts, white; lower parts white, tinged anteriorly, laterally, and posteriorly with brownish gray; length 12.25–13.50, wing 5.90–6.00, culmen .95–1.00. *Eggs* 1.98 × 1.46, dull light buff. *Hab.* Whole of North America, breeding northward.................... 153. **C. albeola** (LINN.). **Buffle-head.**

GENUS **CLANGULA** LEACH. (Page 86, pl. XXV., fig. 4.)

Species.

Adult male in winter: Sides of head light smoke-gray, the eyelids and rest of head and neck, upper part of chest, and upper back, white; a dusky patch on each side of neck; breast and most of upper parts black, the scapulars pale pearl-gray or grayish white; lower parts white, the sides tinged with pearl-gray. *Adult male in summer:* Fore part of head pale grayish; eyelids and space behind eye white; rest of head and neck, with upper parts generally, sooty blackish or dark sooty brown, the upper back varied with fulvous, and scapulars edged with same; breast and upper belly dark sooty grayish, remaining lower parts white, shaded on sides with pale pearl-gray. *Adult female in winter:* Head, neck, and lower parts chiefly white; top of head dusky; chest grayish; upper parts dusky brown, the scapulars bordered with light brownish, sometimes tipped with grayish. *Adult female in summer:* Head and neck dark grayish brown, with a whitish space surrounding the eye, and another on each side of neck; otherwise much as in winter plumage, but scapulars chiefly light brown or fulvous, with dusky centres. *Young:* Similar to winter female, but much more uniform above, with scarcely any lighter borders to scapulars, the head and neck light brownish gray, darker on crown, and whitish before and behind eye. *Downy young:* Above dark hair-brown, relieved only by a few grayish white markings on side of head, about eye, beneath which is a distinct dusky stripe running from the corner of the mouth to the hind-head; lower parts white, interrupted by a dark brown band across chest. Length (of male) 20.75–23.00, wing 8.50–9.00, middle tail-feathers 8.00–8.50, culmen 1.10; the female smaller (about 15.00–16.00 long), with middle tail-feathers not conspicuously lengthened. *Eggs* 2.05 × 1.49, pale dull grayish pea-green, varying to dull light olive-buff. *Hab.* Northern portion of northern hemisphere; in America, south, in winter, to nearly across the United States........................ 154. **C. hyemalis** (LINN.). **Old-squaw.**

GENUS **HISTRIONICUS** LESSON. (Page 86, pl. XXV., fig. 3.)

Species.

Adult male in winter: Lores and broad stripe on each side of crown, spot over ears, short stripe down each side of hind-neck, narrow collar round lower neck, broad bar across each side of breast, middle portion (longitudinally) of outer scapulars, greater part of tertials, spot near tip of greater wing-coverts, and spot at each side of base of tail, white; broad stripe along each side of crown, together with entire sides and flanks, bright rufous; rest of plumage chiefly bluish plumbeous, deepening into blackish along the margins of the white markings; speculum dark metallic violet-blue. *Adult male in summer:* Colors very much duller than in the winter plumage, the pattern of which is imperfectly indicated; speculum dull dusky brownish gray with little metallic gloss; lower parts grayish white, spotted with grayish brown, the sides, flanks, and under tail-coverts nearly uniform grayish brown. *Adult female:* Much like the summer male, but the head, neck, and chest grayish brown, with a distinct white spot on the ear-covert region, and the fore part of the head (laterally) inclining to white. *Young:* Similar to the adult female, but browner and more uniform above, the chest, flanks, and under tail-coverts decidedly brownish. Length 15.00–17.50, wing 7.40–8.00, culmen 1.05–1.10. *Eggs* 2.30 × 1.62, buffy white or pale buff? (Identification doubtful.) *Hab.* Northern portion of northern hemisphere; in America, south, in winter, to Middle States, Ohio Valley, and coast of California, breeding south to Newfoundland, northern Rocky Mountains, and the Sierra Nevada, as far as lat. 38°.

155. **H. histrionicus** (LINN.). **Harlequin Duck.**

GENUS **CAMPTOLAIMUS** GRAY. (Page 86, pl. XXV., fig. 2.)

Species.

Adult male: Head, neck, chest, scapulars, and wings (except quills) white; rest of plumage, including stripe on top of head and broad ring round neck, deep black; stiffened feathers of cheeks brownish white. *Adult female:* Uniform brownish gray, the wings more plumbeous; tertials silvery gray, edged with blackish; secondaries white, primaries dusky. *Young male:* Similar to the adult female, but chin and throat white, and white chest of adult male strongly indicated; greater wing-coverts white. Length about 18.00–23.75, wing 8.50–8.90, culmen 1.60–1.70, tarsus 1.50–1.60, middle toe 2.25–2.40. *Hab.* Formerly, northern Atlantic coast of North America, south, in winter, to Long Island, New Jersey, and the Great Lakes. *Believed to be now nearly if not quite extinct.*

156. **C. labradorius** (GMEL.). **Labrador Duck.**

GENUS **ENICONETTA** GRAY. (Page 86, pl. XXV., fig. 5.)

Species.

Adult male: Head and upper neck satiny white, the stiffened feathers of lores and short occipital tuft olive-green; space round eyes, chin, throat, lower neck (all round), middle of back, scapulars, tertials and secondaries glossy blue-black; scapulars striped with satiny white, and tertials with inner webs wholly of this color; all the wing-coverts, anterior scapulars, and sides of back, pure white; speculum rich dark violet or violet-blue, tipped with white; lower parts deep tawny, becoming dusky or blackish on belly and fading into a more buffy or ochreous tint on chest, sides, and flanks. *Adult female:* Above dusky and fulvous, the former prevailing; head and neck light brownish, speckled with dusky; chest and breast light rusty brown, irregularly spotted or barred with dusky; belly uniform sooty brown; wing-coverts dusky, tipped with brownish gray; falcate tertials mostly dusky, and speculum much less brilliant than in the male. *Young:* Similar to adult female, but tertials much less falcate, and speculum dull dusky, with little if any metallic lustre. Length 16.00–18.00, wing 8.00–8.50, culmen 1.40–1.45. *Eggs* 2.30 × 1.62, varying from pale olive-buff to pale grayish olive-green or pale dull pea-green. *Hab.* Arctic and subarctic coasts of northern hemisphere; Aleutian Islands, east to Unalashka, Kadiak, and Fort Kenai on the Alaskan coast.

157. **E. stelleri** (PALL.). **Steller's Duck.**

GENUS **ARCTONETTA** GRAY. (Page 87, pl. XXVI., fig. 1.)

Species.

Adult male in winter: Satiny "pad" encircling eye, dull white, bordered anteriorly and posteriorly by a vertical black line; lores and forehead covered by a "cushion" of stiffened feathers (like the "pile" of velvet plush), whitish anteriorly, shading into olive-green and this into light greenish buff; crown and occiput covered by a cowl or hood of pendent, stiffened, hair-like feathers of a light olive-green color; a broad stripe of darker green beneath the eye; rest of head and neck white; lower parts, rump, etc., plain plumbeous drab, or dark smoky gray; entire back, scapulars, wing-coverts (except greater), falcate tertials, and patch on each side of rump, yellowish white; bill orange (in life). *Adult female:* Above barred with light fulvous and black; lower parts similar, the abdomen, however, plain grayish brown; head and neck light grayish buff, finely streaked with dusky, the throat, however, nearly immaculate; wings grayish brown, the greater coverts and secondaries indistinctly tipped with whitish. Length about 21.50, wing 10.00, culmen 1.00. *Eggs* 2.57 × 1.77, pale olive-buff, varying to pale grayish olive-green or pea-green. *Hab.* Coast of Alaska, from Norton Sound to Point Barrow.

158. **A. fischeri** (BRANDT). **Spectacled Eider.**

GENUS **SOMATERIA** LEACH. (Page 87, pl. XXV., fig. 6; pl. XXVI., fig. 3.)

Species.

COMMON CHARACTERS.—*Adult males* with the plumage pied black and white (the lower parts chiefly black, the upper surface mostly white), the breast more buff or cream-colored, the head varied with light green, black, etc. *Females* and *young* with the plumage barred with dusky and pale fulvous or rusty, the head and neck streaked with the same. Length about 20.00–26.00. *Eggs* pale olive-buff, pale dull olive-green or grayish pea-green.

a^1. Anterior point of feathering on forehead reaching only about half-way from the point of the naked angle on side of forehead to nostril; feathering of lores extending forward to at least beneath the posterior end of the nostril; *adult males* with scapulars and tertials white, the top of head chiefly black. (Subgenus *Somateria.*)

b^1. Distance from anterior point of loral feathering to extremity of naked angle on side of forehead, usually greater than from same point to tip of upper mandible; adult male without any black on throat.

c^1. *Adult male* with angle on side of forehead narrow and pointed; black of head bordered beneath by pure white, except at posterior extremity only.

d^1. *Adult male* with bill dull grayish olive in life, the breast deeper, more vinaceous, buff, the tertials less falcate; bill from posterior end of nostril 1.65, angle from anterior extremity of loral feathering to extreme point 1.46, depth of upper mandible (at frontal apex) .92. *Adult female* with bill much heavier than in the next, with nail larger and more strongly hooked; bill from posterior border of nostrils 1.47–1.53, angle 1.38–1.43, depth of upper mandible .80–.90. *Hab.* Northern Europe.

S. mollissima (LINN.). **Eider.**[1]

d^2. *Adult male* with bill orange-yellowish in life, the breast paler buff, the tertials more strongly falcate; bill from posterior end of nostril not more than 1.55, angle 1.38–1.52, its width across middle not more than .30, depth of upper mandible .90–1.03. *Adult female:* Bill from nostril 1.30–1.50, angle 1.20–1.40, depth of upper mandible 0.78–0.95. *Downy young:* Above grayish brown, fading gradually into paler grayish on lower parts, the abdomen inclining to grayish white; chin and a broad superciliary stripe pale brownish, in strong contrast with a dark brown stripe on side of head. *Eggs* 2.97 × 1.97. *Hab.* Eastern Arctic America, including Greenland; south to northern Labrador in summer and to northern border of United States in winter.

159. **S. mollissima borealis** (BREHM). **Greenland Eider.**[2]

c^2. *Adult male* with angle on side of forehead broad and rounded; black of head bordered beneath by pale green for nearly its entire length.

Bill from posterior end of nostril 1.35–1.48, angle from anterior extremity of loral feathering 1.75–2.00, its width across middle not less than .45, depth of upper mandible at frontal apex 1.00–1.28. *Adult female:* Bill from posterior end of nostril 1.32, angle 1.87 (width .22), depth of upper mandible .78. *Eggs* 2.97 × 2.01. *Hab.* Atlantic coast of North America, from Maine to Newfoundland and southern Labrador; south, in winter, to the Delaware and the Great Lakes.

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[1] For references, see No. 159, A. O. U. Check List: the American bird proves to be not the true *S. mollissima*, however, but a fairly distinguishable race, characterized as above.

[2] *Platypus borealis* C. L. BREHM, Lehrb. Europ. Vög. 1824, 813. *Somateria mollissima borealis* A. E. BREHM, Verz. Samml. Eur. Vög. 1866, 14.

160. **S. dresseri** SHARPE. **American Eider.**

*b*². Distance from anterior extremity of loral feathering to extremity of naked angle on side of forehead, less than distance from same point to tip of upper mandible; adult male with a V-shaped mark of black on throat.

Plumage otherwise essentially as in *S. mollissima* and *S. dresseri;* bill of adult male bright orange or orange-red in life, with paler tip. *Male:* Wing 11.75–12.75, culmen 1.80–2.20, length of bill to point of basal angle 2.50–3.10, greatest width of angle .20–.30, tarsus 2.00–2.30. *Female:* Wing 11.50–12.50, length of bill to point of basal angle 2.50–2.65. *Eggs* 2.96 × 1.96. *Hab.* Northwestern America, east to Great Slave Lake; northeastern Asia.

161. **S. v-nigra** GRAY. **Pacific Eider.**

*a*². Anterior point of feathering on forehead reaching as far forward as posterior end of nostril, the loral feathering extending only about half as far. *Adult male* with scapulars and tertials black, the top of the head light bluish gray; lateral base of upper mandible, in adult male, enlarged into a very conspicuous broad lobe, the width of which at widest part exceeds the depth of upper mandible at anterior end of nostril. (Subgenus *Erionetta* COUES.)

Adult male with a V-shaped mark of black on throat, as in *S. v-nigra. Female* and *young* hardly different in plumage from other species, but very readily distinguishable by different outline of feathering at base of upper mandible, as pointed out above. Wing 10.50–11.25, bill to end of basal lobe 1.20–1.30 in male, about 2.00 in female, tarsus 1.80–1.86. *Eggs* 2.77 × 1.83. *Hab.* Northern portions of northern hemisphere; south, in winter, to New Jersey and the Great Lakes.

162. **S. spectabilis** (LINN.). **King Eider.**

GENUS **OIDEMIA** FLEMING. (Page 86, pl. XXVII., figs. 1–4.)

Species.

COMMON CHARACTERS.—*Adult males* uniform black, with or without white speculum, and with or without white patches on head; bill brightly colored in life with tints of yellow, orange, or red, but partly black. *Adult females* plain brownish, lighter and more grayish beneath, the white head-markings of the male (if any) indistinctly indicated.

*a*¹. Length of commissure much less than inner toe, without claw; adult males entirely uniform black; bill of adult male much swollen on top at base; distance from anterior end of nostril to nearest feathers of forehead greater than distance from same point to tip of bill. (Subgenus *Oidemia.*)

b^1. Nail of bill much flattened, scarcely hooked at tip. *Adult male:* Bill black, with a yellow or orange spot on culmen immediately in front of the basal knob. *Adult female:* Above sooty brown, beneath paler, inclining to light grayish brown on breast and belly; bill wholly dusky, the basal half of the culmen level, or scarcely if at all elevated at base. Wing 8.00–9.20, culmen 1.90, depth of upper mandible at base .98–1.00 in male, .50 in female, tarsus 1.50–1.60. *Hab.* Northern portions of eastern hemisphere.

O. nigra (LINN.). **European Scoter.**[1]

b^2. Nail of bill distinctly arched, and decidedly hooked at tip. *Adult male:* Basal half of upper mandible, including whole of knob, yellow or orange; rest, including entire edge, black. *Adult female:* Above dusky grayish brown, the feathers of dorsal region with paler tips; lower parts paler grayish brown, the lighter tips broader, though wanting on the posterior portions; lateral and under-parts of head nearly uniform light grayish brown, in decided contrast with dark brown of pileum and nape; bill uniform blackish. *Young:* Much like adult female, but lighter beneath, where indistinctly barred (mostly beneath the surface) with grayish brown. Length 17.00–21.50, wing 8.75-9.50, culmen 1.65–1.80, depth of upper mandible at base .85–.95 in male, .70 in female, tarsus 1.65–2.00. *Eggs* 2.55 × 1.80; pale dull buff or pale brownish buff. *Hab.* North America, breeding northward; in winter, south to New Jersey, the Great Lakes, and California.

163. **O. americana** SW. & RICH. **American Scoter.**

a^2. Length of commissure much more than length of inner toe without claw.

b^1. Feathering of head advancing nearly or quite as far on lores as on forehead; sides of upper mandible at lower portion of base sunken; wing with a white speculum. (Subgenus *Melanitta* BOIE.)

c^1. Loral feathers separated from nostril by a space nearly or quite equal to length of nostril; male with lower part of swollen basal portion of upper mandible, on sides, unfeathered; sides of bill orange-yellow in life; basal portion of culmen elevated but not forming an abrupt knob; plumage uniform black, or brownish black, relieved by a white wing-speculum and a white patch beneath and behind eye. *Adult female:* Sooty grayish, or dusky grayish brown, darker above; wing with a white speculum, but no white on head; bill wholly dusky. *Downy young:* "Crown, nape, hind-neck, and sides of the head to a line from the base of the lower mandible deep brown; a small white spot below the eye; upper parts uniform dark brown with an olivaceous tinge; a small white patch of down on the wings; under-parts white, the upper breast crossed by a dull brown band." (DRESSER.) Length about 21.00, wing 10.65–11.40, culmen 1.40–1.70, depth of upper mandible at base 1.10–1.30, tarsus 1.80–2.10. *Eggs* 2.87 × 1.92, pale cream-color. *Hab.* Northern portions of eastern hemisphere; accidental in Greenland .... 164. **O. fusca** (LINN.). **Velvet Scoter.**

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[1] *Anas nigra* LINN., S. N. ed. 10, i. 1758, 123. *Oidemia nigra* FLEM., Brit. Anim. 1828, 119.

*c*². Loral feathering separated from nostrils by a space much narrower than length of nostril; male with swollen lateral base of upper mandible entirely feathered, the sides of bill bright red or orange-red in life.

*d*¹. Width of bill at widest part equal to or greater than distance from nostril to tip, the lateral outlines strongly convex; knob with anterior outline sloping backward; distance from frontal feathering to where outline of knob begins to incline downward not more than .45; sides of bill, in life, orange-red; plumage as in *O. fusca.* Length 19.75–23.00, wing 10.65–11.40, culmen 1.40–1.70, depth of upper mandible at base 1.10–1.30, tarsus 1.80–2.10. *Eggs* 2.68 × 1.83, pale dull buff, varying to cream-color. *Hab.* Northern North America; south, in winter, to Chesapeake Bay, the Great Lakes, and southern California.
165. **O. deglandi** BONAP. **White-winged Scoter.**

*d*². Width of bill at widest part less than distance from nostril to tip, the lateral outlines nearly parallel; knob of male with anterior outline decidedly concave, the top forming a more or less conspicuous projection; distance from frontal feathers along top of knob to anterior extremity not less than .55; sides of bill bright red in life; plumage as in *O. fusca* and *O. deglandi*, but black usually much more intense. *Hab.* Northeastern Asia (Kamtschatka to Japan).
O. stejnegeri RIDGW. **Kamtschatkan Scoter.**[1]

*b*². Feathering of head advancing much farther forward on forehead than on lores; sides of bill at base with swollen portion entirely naked; wing without white speculum. (Subgenus *Pelionetta* KAUP.)

Adult male: Uniform deep black, the lower parts more sooty; a patch on forehead and another on hind-neck, pure white (one or the other of them occasionally absent); bill reddish in life, the swollen base, on each side, marked with a conspicuous large spot of jet-black; length about 20.00–22.00, wing 9.25–9.75, culmen 1.30–1.60, tarsus 1.55–1.85. *Adult female:* Top of head and hind-neck dusky; rest of head grayish brown, usually with an indistinct whitish patch near corner of mouth; upper parts dusky, the feathers sometimes with paler tips; lower parts grayish brown, paler on belly, the feathers of breast and sides tipped with dull whitish; bill wholly dusky, scarcely swollen at base; length about 18.00–19.00. *Young:* Similar to adult female, but side of head with two quite distinct whitish patches, one near base of bill, the other over ears; color of upper parts more uniform, and plumage everywhere of softer texture. *Eggs* 2.47 × 1.70, pale buff, or pale creamy buff. *Hab.* North America in general, breeding far northward; south, in winter, to Jamaica, the Carolinas, Ohio River, and Lower California; accidental in Europe....... 166. **O. perspicillata** (Linn.). **Surf Scoter.**

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[1] New species. (=*O. deglandii* STEJN., Orn. Expl. Kamtsch. 1885, 174.)

Genus **ERISMATURA** Bonaparte. (Page 87, pl. XXVI., fig. 4.)

Species.

Common Characters (of American species).—*Adult males* with upper parts uniform rich reddish chestnut; head partly or entirely black, the bill fine light blue in life. *Females* and *young*, dull grayish brown above, finely mottled (sometimes indistinctly barred) with paler; sides of head dull whitish, crossed by a longitudinal dusky bar or band.

*a*¹. Width of bill near end .90–.95.

Adult male: Above, including neck, bright reddish chestnut; top of head black; entire side of head, below eyes, white; lower parts, from chest back, whitish (the feathers dark brownish gray immediately beneath the surface, and this sometimes completely exposed by wearing away of the light-colored tips), sometimes overlaid by a bright rusty wash or stain. *Adult female* and *young male:* Above grayish brown, finely mottled and sometimes indistinctly barred with grayish buff; top of head darker; rest of head grayish white, crossed longitudinally by a stripe of mottled brownish, from corner of mouth to ear-coverts; neck pale brownish gray, lower parts dull whitish (on surface). *Downy young:* Above dark smoky brown, darker on head; a whitish spot on each side of back; below eye, from bill to occiput, a stripe of brownish white, and beneath this a narrower one of dusky brown, confluent with the brown of the nape; beneath, grayish white, shading into sooty brown on chest. Length about 13.50–16.00, wing 5.75–6.00, culmen about 1.50–1.60. *Eggs* 2.42 × 1.80, oval or ovoid, white or pale buffy, with finely but distinctly granulated surface. *Hab.* Temperate North America, south to New Granada and West Indies.

167. **E. rubida** (Wils.). **Ruddy Duck.**

*a*². Width of bill near end only .70–.85.

Adult male: Head and neck (except lower half of latter in front) uniform black; rest of plumage essentially as in corresponding stage of *E. rubida.* *Adult female:* Similar to same sex of *E. rubida*, but darker and very distinctly barred on the sides and upper parts with light fulvous or buffy. *Hab.* Southern South America.

E. ferruginea Eyton. **Ferruginous Duck.**[1]

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[1] *Erismatura ferruginea* Eyton, Mon. Anat. 1838, 170.

GENUS **NOMONYX** RIDGWAY. (Page 87, pl. XXVI., fig. 2.)

Species.

Adult male: Fore-part and top of head, black; rest of head, with neck, dark rusty cinnamon; back and sides rusty, striped with black; belly, etc., yellowish rusty, the feathers occasionally showing dusky centres; wings brown, with a conspicuous white speculum on greater coverts. *Immature (?) male:* Top of head, two stripes on side of head, and general color of upper parts, dull black; spaces between head-stripes, also cheeks and chin, dull white; neck and chest rusty chestnut, sometimes with a purplish tinge; rest of lower parts dull ochraceous, the feathers with concealed dusky central spots; middle and greater wing-coverts, basal portion of secondaries, and whole of axillars, white; back and scapulars varied with bars and borders of rusty. *Adult female:* Similar to the preceding, but black less intense and more broken, the rusty paler (sometimes replaced by ochraceous) and spotted with black; belly dull ochraceous white, and wing-speculum smaller. Length about 12.00–14.50, wing about 5.50–5.75, tail 3.50–4.50, culmen 1.30–1.37. *Hab.* Tropical America in general, including the West Indies; accidental in the eastern United States (Lake Champlain, New York, and Lake Koshkonong, Wisconsin).

125. **N. dominicus** (LINN.). **Masked Duck.**

GENUS **CHEN** BOIE. (Page 87, pl. XXVIII., figs. 1, 2.)

Species.

COMMON CHARACTERS.—*Adult* with whole head and at least part of the neck white[1] (in two of the three species the plumage entirely white, except quills, which are blackish); the bill dull purplish red (in life), with whitish nail, and feet purplish red. *Young* with head and neck grayish, the rest of the plumage either chiefly grayish brown or else striped with grayish on a whitish ground; bill and feet dusky.

*a*¹. Bill very robust, the commissure widely gaping, and enclosing a broad blackish space, extending from the corner of the mouth nearly to the tip of the bill; feathering at base of upper mandible, along each side, having a very convex outline; culmen 1.95 or more.

*b*¹. Plumage chiefly grayish brown, the rump (usually) and wing-coverts bluish gray.

Adult: Head and part of neck, and sometimes rump and part of lower surface, white; greater wing-coverts and secondaries (including tertials) edged with white. *Young:* Similar to adult, but head and neck uniform deep grayish brown, only the chin being white. Length 26.50–30.00, wing 15.00–17.00, culmen 2.10–2.30, tarsus 3.00–

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[1] In some specimens the head more or less stained with bright rusty, or orange-rufous, from contact with ferruginous matter.

3.30, middle toe 2.15–2.50. *Hab.* Interior of North America, east of Rocky Mountains, breeding on the eastern shores of Hudson's Bay; migrating south, in winter, through Mississippi Valley to the Gulf coast; occasional on Atlantic coast.

169.1. **C. cærulescens** (Linn.). **Blue Goose.**[1]

b^2. Plumage of adult entirely white, except primaries and their coverts; *young* grayish white, the upper parts striped with dusky grayish.

Adult: Uniform pure white, the head often stained with rusty; primaries black, becoming grayish basally, their coverts, and the alulæ, ash-gray. *Young:* Head, neck, and upper parts pale grayish, the feathers of the latter with whitish edges and (especially wing-coverts and tertials) striped medially with darker; rump, upper tail-coverts, tail, and lower parts plain white.

c^1. Length about 23.00–28.00, wing 14.50–17.00 (16.36), culmen 1.95–2.30 (2.15), tarsus 2.80–3.25 (3.01), middle toe 2.00–2.50 (2.34). *Eggs* 3.13 × 2.12. *Hab.* Western North America, breeding in Alaska; migrating south, in winter, to southern California and Gulf of Mexico; northeastern Asia.

169. **C. hyperborea** (Pall.). **Lesser Snow Goose.**

c^2. Length about 30.00–38.00, wing 17.35–17.50 (17.42), culmen 2.55–2.70 (2.63), tarsus 3.15–3.50 (3.28), middle toe 2.60–2.80 (2.70). *Hab.* Eastern North America; breeding in northern Greenland, and probably arctic regions east of Mackenzie River; United States (Mississippi Valley to Atlantic coast) only during migrations and in winter.

169*a*. **C. hyperborea nivalis** (Forst.). **Greater Snow Goose.**

a^2. Bill comparatively weak, the commissure not gaping, and not enclosing a distinct blackish space; feathering at base of upper mandible, along each side, forming a nearly straight, oblique line; culmen 1.70 or less.

Adult with basal portion of upper mandible often wrinkled and warty; plumage, at all ages, as in *C. hyperborea*, but young rather lighter in color, with the darker stripes of upper parts less strongly contrasted; length 20.00–26.00, wing 13.75–15.50, culmen 1.50–1.70, tarsus 2.30–3.00, middle toe 1.80–2.05. *Hab.* Interior of Arctic America in summer; migrating south, in winter, to southern California, and eastward to Montana.............................. 170. **C. rossii** (Baird). **Ross's Snow Goose.**

Genus ANSER Brisson. (Page 87, pl. XXVIII., fig. 3.)

Species.

Common Characters.—Plumage brownish, the feathers of back, etc., with lighter tips; lower parts pale brownish gray or grayish white, becoming pure white on under tail-coverts; upper tail-coverts white; tail dusky, tipped with white.

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[1] References given on page 351 ("Hypothetical List") of the A. O. U. Check List. It is, however, beyond question a good species.

*a*¹. Culmen not more than 2.30, tarsus less than 3.00.

Adult: Fore part of head, all round, to about half way across lores and forehead, white; rest of head grayish brown (darkest next the white), as are also the neck and upper parts, the latter varied by distinct grayish tips to the feathers; lower parts grayish white, blotched or irregularly spotted with black; anal region, crissum, and tail-coverts white; greater wing-coverts ash-gray tipped with white; secondaries blackish edged with white; bill light colored (yellowish or orange in life), with white nail; feet light-colored (orange or reddish in life). *Young:* Similar to adult, but fore-part of head dusky instead of white, lower parts without black markings, and nail of bill dusky.

*b*¹. Length about 28.00, wing 14.75–16.00, culmen 1.60–1.75, depth of upper mandible at base about .90, width .85–1.05, tarsus 2.25–2.80. *Eggs* 3.06 × 2.03. *Hab.* Northern portions of eastern hemisphere; southeastern Greenland?. 171. **A. albifrons** (Gmel.). **White-fronted Goose.**

*b*². Length 27.00–30.00, wing 14.25–17.50, culmen 1.80–2.35, depth of upper mandible at base .90–1.20, width .85–1.05, tarsus 2.60–3.20. *Eggs* 3.16 × 2.07. *Hab.* North America, breeding far northward; in winter, south to Mexico and Cuba..... 171*a*. **A. albifrons gambeli** (Hartl.). **American White-fronted Goose.**

*a*². Culmen more than 2.30, tarsus more than 3.00.

Adult: Head and neck grayish brown; upper parts brownish gray, the feathers tipped with grayish white; rump blackish brown, lower parts brownish gray, becoming white posteriorly, the upper tail-coverts and sides of rump also white; bill chiefly light-colored (orange in life?), the nail, culmen, and basal half of lower mandible black; feet light-colored (orange-yellowish in life); length about 30.00–32.00, wing 18.50, or less, culmen 2.35, tarsus 3.10. *Hab.* Northern portions of eastern hemisphere; said to have occurred in Canada and at Hudson's Bay (*fide* Nuttall). **A. segetum** (Gmel.). **Bean Goose.**[1]

Genus BRANTA Scopoli. (Page 87, pl. XXVIII., fig. 5.)

Species.

Common Characters.—Bill and feet entirely deep black, at all ages; head and neck black, one or the other, or both, relieved by white patches; tail-coverts white; tail and quills uniform black; upper parts brownish, the feathers with lighter tips; lower parts (from thighs forward) grayish white (in *B. leucopsis* only), grayish, brownish, or dusky.

*a*¹. Head partly white.

*b*¹. Head black, with a somewhat triangular whitish patch on each cheek, usually confluent on throat, but sometimes separated by a black throat-stripe; chest grayish or brownish, like breast and belly.

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[1] *Anas segetum* Gmel., S. N. i. 1788, 512. *Anser segetum* Meyer, Taschb. ii. 1810, 554.

*c*¹. Lower parts light brownish gray, fading gradually into white on anal region; white cheek-patches usually confluent on throat; white collar round lower neck usually wanting, rarely distinct.

*d*¹. Larger (wing usually more than 16.00, culmen usually more than 1.75); tail-feathers usually 18–20; length about 35.00–43.00, wing 15.60–21.00, culmen 1.55–2.70, tarsus 2.45–3.70. *Eggs* 3.55 × 2.27. *Hab.* Temperate North America, breeding chiefly within the United States.

172. **B. canadensis** (Linn.). **Canada Goose.**

*d*². Smaller (wing usually less than 16.00, culmen usually less than 1.75); tail-feathers usually 14–16; length about 25.00–34.00, wing 14.75–17.75, culmen 1.20–1.90, tarsus 2.25–3.20. *Eggs* 3.18 × 2.10. *Hab.* Arctic and subarctic America; south, in winter, through United States, chiefly west of Alleghanies; northeastern Asia (Japan to eastern Siberia)............. 172*a*. **B. canadensis hutchinsii** (Sw. & Rich.). **Hutchins's Goose.**

*c*². Lower parts deep grayish brown or brownish gray (often not conspicuously paler than upper parts), abruptly defined against white of anal region; white cheek-patches usually separated by a black throat-stripe, or black mottling on throat; white collar round lower neck usually very distinct.

*d*¹. Larger (wing more than 16.00, culmen more than 1.25); tail-feathers usually 18–20; length about 35.00; wing 16.25–18.00, culmen 1.40–1.65, tarsus 3.05–3.25. *Hab.* Northwest coast of North America, north to Sitka; south, in winter, to California............... 172*b*. **B. canadensis occidentalis** (Baird). **White-cheeked Goose.**

*d*². Smaller (wing less than 16.00, culmen less than 1.25); tail-feathers usually 14–16; length about 23.00–25.00, wing 13.60–14.50, culmen 0.95–1.15, tarsus 2.40–2.75. *Eggs* 3.02 × 2.00. *Hab.* Pacific coast of North America, breeding chiefly about the shores of Norton Sound and the lower Yukon; south, in winter, to California, and, more rarely, to upper Mississippi Valley (Wisconsin, etc.).

172*c*. **B. canadensis minima** Ridgw. **Cackling Goose.**

*b*². Head mostly white, the lores, occiput, neck, and chest (sometimes back also) black. Above bluish gray, the feathers marked with a broad subterminal bar of black and a narrow terminal bar of white; lower parts grayish white, the sides and flanks brownish gray, the feathers with whitish tips; length 23.50–28.00, wing 14.90–16.90, culmen 1.10–1.45, tarsus 2.50–3.00. *Eggs* 3.71 × 2.38. *Hab.* Northern Europe; occasional on Atlantic coast of North America (Hudson's Bay to North Carolina).

175. **B. leucopsis** (Bechst.). **Barnacle Goose.**

*a*². Head entirely black.

*b*¹. Middle of neck with a patch of white streaks on each side; upper parts brownish gray, the feathers narrowly tipped with grayish white; lower parts pale grayish, in conspicuous and abrupt contrast with black of chest, and gradually fading into the white of anal region and crissum. *Young:* Similar to adult, but wing-coverts and secondaries broadly tipped with white, forming conspicuous bars; white on sides of neck reduced to small specks; lower parts paler and more uniform. Length 23.50–30.50, wing 12.30–13.60, culmen 1.20–1.50, tarsus 2.10–2.40. *Eggs* 2.92 × 2.02. *Hab.* Sea-coasts of Europe and eastern North America, breeding only within the Arctic circle; casual or occasional in upper Mississippi Valley during winter.

173. **B. bernicla** (LINN.). **Brant.**

*b*². Middle of neck encircled by a broad white collar, interrupted only behind; upper parts nearly uniform dark sooty brown; lower parts dark sooty slate, not distinctly, if at all, contrasted with black of chest, but abruptly defined against white of anal region and crissum. *Young:* Similar to adult, but collar indistinct or obsolete, the larger wing-coverts and secondaries broadly tipped with white, and feathers of sides and flanks uniform brownish gray, without white tips. Length 22.00–29.00, wing 12.70–13.50, culmen 1.20–1.35, tarsus 2.20–2.50. *Eggs* 2.87 × 1.87. *Hab.* Western Arctic America, migrating south, in winter, along Pacific coast to Lower California, and very rarely straggling to Atlantic coast (Long Island).

174. **B. nigricans** (LAWR.). **Black Brant.**

GENUS **PHILACTE** BANNISTER. (Page 88, pl. XXVIII., fig. 4.)

Species.

Adult: Head and hind-neck white, the former frequently stained with orange-rufous; throat and neck (except behind) plain dusky; basal half of tail slate-color, terminal half white; rest of plumage bluish gray, handsomely barred with black and white, these markings very sharply contrasted on upper parts, but much less distinct on lower, which are more or less tinged with fulvous. *Young:* Similar to adult, but with head and whole neck dusky, the former speckled, especially on top, with white; markings in general less distinct than in adult. Length about 26.00, wing 14.30–15.75, culmen 1.40–1.65, tarsus 2.60–2.85, middle toe 2.40–2.50. *Eggs* 3.16 × 2.12. *Hab.* Coast of Alaska, north of the peninsula, chiefly about the shores of Norton Sound and valley of the lower Yukon.

176. **P. canagica** (SEVAST.). **Emperor Goose.**

GENUS **DENDROCYGNA** SWAINSON. (Page 87, pl. XXV., fig. 4.)

Species.

*a*¹. Plumage much spotted or speckled, without large areas of uniform color.

Above dull brown, the feathers paler at tips; neck streaked with pale fulvous and dusky; lower parts dull whitish, irregularly spotted with black. *Hab.* West Indies (Jamaica and St. Croix).

D. arborea Linn. **Tree-duck.**[1]

*a*². Plumage chiefly uniform, in distinctly defined areas of different colors.

*b*¹. Belly plain light tawny-cinnamon, or fulvous, the flanks striped with paler.

Adult: Back and scapular region black, the feathers tipped with fulvous or cinnamon; upper tail-coverts white; head and neck plain tawny, like lower parts, the top of head and hind-neck darker; bill black; length about 20.00–21.00, wing 8.10–8.90, culmen 1.65–1.95, tarsus 2.10–2.40, middle toe 2.30–2.80. *Hab.* Tropical and subtropical North America, north to California, Nevada, and Louisiana; also, southern Brazil, Paraguay, and Argentine Republic.

178. **D. fulva** (Gmel.). **Fulvous Tree-duck.**

*b*². Belly uniform black.

*c*¹. Under tail-coverts white, spotted with black; bill light-colored (red in life); above reddish brown, the rump and upper tail-coverts black.

*d*¹. *Adult:* Lower part of neck, all round, and chest, reddish brown, or cinnamon, like the back. *Young:* Similar, but pattern of coloration much less distinct, and colors duller; the reddish brown replaced by dingy grayish, tinged with rusty, the belly, flanks, etc., grayish white, tinged with dusky; bill and feet dusky. *Downy young:* Above blackish brown, varied by large, sharply defined areas of sulphury buff; lower parts pale buff-yellow, the belly whitish. Length 19.75–24.00, wing 9.20–9.70, culmen 1.90–2.15, tarsus 2.25–2.60, middle toe 2.25–2.70. *Eggs* 2.12 × 1.56, white, sometimes tinged with pale olive greenish or buffy. *Hab.* Middle America, including Rio Grande Valley in Texas.

177. **D. autumnalis** (Linn.). **Black-bellied Tree-duck.**

*d*². *Adult:* Lower part of neck, all round, including chest, brownish gray, abruptly contrasted with the chestnut-brown of the back. *Hab.* Northern South America.

D. discolor Scl. & Salv. **Colombian Tree-duck.**[2]

*c*². Under tail-coverts uniform black.

Adult: Chest and lower part of neck, all round, rich chestnut; sides yellowish white, barred with blackish; fore part of head white; rest of head, and upper part of neck, black, with a white patch on fore-neck. *Hab.* Eastern South America and western Africa.

D. viduata (Linn.). **Brazilian Tree-duck.**[3]

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[1] *Anas arborea* Linn., S. N. ed. 12, i. 1766, 207. *Dendrocygna arborea* Eyt., Mon. Anat. 1838, 110.

[2] *Dendrocygna discolor* Scl. & Salv., Nom. Neotr. 1873, 161.

[3] *Anas viduata* Linn., S. N. ed. 12, i. 1766, 205. *Dendrocygna viduata* Eyt., Mon. Anat. 1838, 110.

GENUS **OLOR** WAGLER. (Page 88, pl. XXIX., fig. 1.)

Species.

COMMON CHARACTERS.—*Adults* with whole plumage pure white, the head often stained with rusty; bill either entirely black, or black and yellow; iris dark brown; feet black. *Young* ashy, sometimes tinged with brownish, the bill flesh-color (or at least partly of this color), and feet grayish, or whitish. *Eggs* white or buffy white.

a^1. Distance from the anterior corner of the eye to posterior end of the nostrils much greater than from the latter point to the tip of the bill.

b^1. Basal portion of bill and entire lores yellow in adult.

c^1. Yellow of bill surrounding nostrils; wing 23.00 or more, and culmen 4.00 or more; length about 4½–5 feet, extent 7–8 feet, wing 23.00–26.00, culmen (including naked space on forehead) 4.00–4.75, tarsus 4.00, middle toe 5.00–6.00. *Eggs* 4.28 × 2.88. *Hab.* Northern parts of eastern hemisphere; occasional in southern Greenland.

179. **O. cygnus** (LINN.). **Whooping Swan.**

c^2. Yellow of bill not extending as far forward as the nostrils; wing less than 23.00, and culmen not more than 3.50; length less than 4 feet, extent about 6 feet, wing 20.00, culmen 3.50, tarsus less than 4.00, middle toe 4.50. *Hab.* Northern portions of eastern hemisphere.

O. bewickii (YARR.). **Bewick's Swan.**[1]

b^2. Basal portion of bill, with lores, black, the latter usually with a small yellow spot.

Length about 4½ feet, extent 7 feet, wing 21.00–22.00, culmen 3.80–4.20, tarsus 4.00–4.32, middle toe 5.40–5.90. *Eggs* 4.19 × 2.72. *Hab.* North America in general, breeding far northward; casual west to Commander Islands, Kamtschatka; accidental in Scotland.

180. **O. columbianus** (ORD). **Whistling Swan.**

a^2. Distance from anterior corner of eye to posterior end of nostril not greater than from the latter point to the tip of the bill.

Bill and lores entirely black; length 5–5½ feet, extent 8 to nearly 10 feet, wing 21.00–27.50, culmen 4.30–4.70, tarsus 4.54–4.95, middle toe 6.00–6.50. *Eggs* 4.46 × 2.92. *Hab.* Interior of North America, more rare or less generally distributed toward the Pacific coast, rare or casual along the Atlantic coast; breeding from Iowa and Dakota northward.

181. **O. buccinator** (RICH.). **Trumpeter Swan.**

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[1] *Cygnus bewickii* YARR., Trans. Linn. Soc. xvi. 1830, 453. *Olor bewickii* STEJN. Proc. U. S. Nat. Mus. v., 1882, 201.

ORDER **ODONTOGLOSSÆ**.—THE LAMELLIROSTRAL GRALLATORES. (Page 1.)

Families.

(Characters same as those given for the Order).... **Phœnicopteridæ.** (Page 121.)

FAMILY **PHŒNICOPTERIDÆ**.—THE FLAMINGOES. (Page 121.)

Genera.

(Characters same as those given for the Family)... **Phœnicopterus.** (Page 121.)

GENUS **PHŒNICOPTERUS** LINNÆUS. (Page 121, pl. XXIX., fig. 2.)

Species.

Adult: General color light vermilion or pinkish, more intense (inclining to scarlet) on wings; flanks rosy carmine; primaries and secondaries deep black; terminal third of bill black; basal portion whitish or yellowish. *Young:* Grayish white, the wings varied with grayish and dusky. *Downy young:* Entirely white. Length about 42.00–48.00, wing 15.30–16.50, culmen 5.20, tarsus 12.00–14.50. *Eggs* 3.55 × 2.18, elongate-ovate or cylindrical-ovate, pure chalk-white. *Hab.* Tropical and subtropical sea-coasts, from Florida Keys and coast of Gulf States to northern South America; Galapagos.................. 182. **P. ruber** LINN. **American Flamingo.**

ORDER HERODIONES.—THE HERONS, STORKS, IBISES, ETC. (Page 1.)

Families.

a^1. Sides of upper mandible with a deep narrow groove extending uninterruptedly from the nostrils to the tip. (Suborder *Ibides.*)

  b^1. Bill very broad and excessively flattened, greatly widened toward end, only the extreme tip decurved.......................... **Plataleidæ.** (Page 122.)

  b^2. Bill slender, nearly cylindrical, or even narrower than deep toward end, gradually but decidedly decurved or bent downward for nearly the whole length.. **Ibididæ.** (Page 123.)

a^2. Sides of upper mandible without any groove.

  b^1. Hind toe inserted above the level of the anterior toes; claws broad and flat, resting on a horny pad or shoe, the middle one not pectinated. (Suborder *Ciconiæ.*)... **Ciconiidæ.** (Page 124.)

  b^2. Hind toe inserted on the same level with the anterior toes; claws narrow, arched, the under surface free, the middle one with its inner edge distinctly pectinated. (Suborder *Herodii.*)

    c^1. Bill lance-shaped, or compressed, narrow, and pointed, the lateral outlines nearly straight, and the gonys several times longer than the width of the lower mandible.................... **Ardeidæ.** (Page 126.)

    c^2. Bill shaped much like an inverted boat; excessively broad, the lateral outlines much bowed, and the gonys not longer than the width of the lower mandible... *Cochleariidæ.*[1]

FAMILY PLATALEIDÆ.—THE SPOONBILLS. (Page 122.)

Genera.

(Characters same as those given for the Family)......... **Ajaia.** (Page 122.)

GENUS AJAIA REICHENBACH. (Page 122, pl. XXXI., fig. 1.)

Species.

Adult: Neck, back, and breast white; tail orange-buff, the shafts deep pink; rest of plumage pale rose-pink, the lesser wing-coverts and upper tail-coverts glossy intense carmine. *Immature (second year?):* Similar to adult, but lacking the carmine of the wing-coverts and upper tail-coverts, and tail peach-blossom pink instead of orange-buff. *Young:* Head completely feathered, except around base of bill; plumage chiefly white, becoming delicate peach-blossom pink on wings, tail, and hinder lower parts; outer webs of bastard wing, primary coverts, and wide borders to exterior primaries (chiefly on outer webs), deep snuff-brown. Length about 28.00–35,00, wing 14.10–15.30, culmen 6.20–7.15, greatest width of bill 2.00–2.20, tarsus 3.75–4.65, middle toe 2.95–3.35. *Eggs* 2.57 × 1.73, ovate, white, or buffy white, blotched, spotted, and stained with various shades of brown. *Hab.* Tropical America in general, north to southern Atlantic and Gulf States, and casually (formerly at least) to California and southern Illinois.

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[1] The Boat-bills, represented by the single genus *Cochlearius* BRISSON (type, *Cancroma cochlearia* LINN.).

183. **A. ajaja** (Linn.). **Roseate Spoonbill.**

Family IBIDIDÆ.—The Ibises. (Page 122.)

Genera.

a^1. Head of adult wholly naked anteriorly; feathers of crown short, close, and blended; plumage of wings and tail pure white or scarlet in adult (the former with glossy black tips to longer quills), dull grayish brown or dusky in young.. **Guara.** (Page 123.)

a^2. Head of adult wholly feathered, except lores; feathers of crown distinctly lanceolate and slightly elongated, forming a short rounded crest when erected; plumage of wings and tail highly metallic, in both old and young. **Plegadis.** (Page 123.)

Genus GUARA Reichenbach. (Page 123, pl. XXX., fig. 2.)

Species.

Common Characters.—*Adults* with the plumage entirely uniform white or scarlet, except tips of the longer quills, which are glossy black. *Young*, uniform dark brownish gray, the belly white. *Eggs* greenish white, buffy, or pale brownish, stained, blotched, and spotted with brown.

a^1. *Adult:* Pure white (tinted with delicate pink in freshly-killed specimens), the tips of the longer quills glossy greenish black. *Young:* Uniform grayish brown, the rump, tail-coverts, base of tail, and under parts of body white. Length 21.50–27.50, wing 10.30–11.75, culmen 4.15–6.30, tarsus 3.10–4.00, middle toe 2.15–2.70. *Eggs* 2.24 × 1.48. *Hab.* Tropical America in general, including West Indies; north, regularly, to North Carolina, southern Illinois and Indiana, and Lower California, casually to Great Salt Lake, Long Island, and Connecticut.................................. 184. **G. alba** (Linn.). **White Ibis.**

a^2. *Adult:* Pure intense scarlet, the tips of the longer primaries glossy blue-black. *Young:* Dark brownish gray, the belly white. Length about 28.00–30.00, wing 10.80–11.00, culmen 6.00–6.50, tarsus 3.70–3.80, middle toe 2.55–2.60 *Eggs* 2.12 × 1.46. *Hab.* Eastern coasts of tropical America, north, casually, to Florida, Louisiana, and Texas......... 185. **G. rubra** (Linn.). **Scarlet Ibis.**

Genus PLEGADIS Kaup. (Page 123, pl. XXX., fig. 1.)

Species.

Common Characters.—*Adults* with head, neck, and (in some species) lower parts uniform chestnut, the upper parts metallic green, bronze, and purple, most brilliant on under surface of wings and tail. *Young:* Head and neck streaked with white and dusky, and lower parts uniform grayish brown or dusky, the upper parts much as in the adult. *Eggs* plain greenish verditer blue.

*a*¹. Legs and feet long and slender, the tarsus with a nearly continuous frontal series of transverse scutellæ. *Adult* with neck, back, lesser wing-coverts, and lower parts rich chestnut. *Young* with lower parts dull grayish brown.

*b*¹. *Adult:* Lores greenish in life, blackish in dried skins; feathers surrounding base of bill blackish. *Downy young:* Blackish, "with a broad white band over the crown; legs and bill yellowish, the latter black at the base and tip, and with a central black band." (DRESSER.) Length about 22.00–25.00, wing 10.20–11.85, culmen 4.30–5.45, tarsus 2.90–4.30, middle toe 2.10–2.80. *Eggs* 2.01 × 1.47. *Hab.* Warmer parts of the eastern hemisphere; also, more southern portion of eastern United States, and West Indies.. 186. **P. autumnalis** (HASSELQ.). **Glossy Ibis.**

*b*². *Adult:* Lores lake-red in life, pale brownish or yellowish in dried skins; feathers surrounding base of bill white. *Young* not obviously different from corresponding stage of *P. autumnalis*. *Downy young when newly hatched:* Clothed with uniform blackish down, the bill whitish, with dusky base. *Older:* Similar, but base and tip of bill, and band across middle portion, blackish; the intervening spaces pinkish white. Length about 19.00–26.00, wing 9.30–10.80, culmen 3.75–6.00, tarsus 3.00–4.40, middle toe 2.10–2.85. *Eggs* 2.05 × 1.41. *Hab.* Tropical America in general (except West Indies?), south to Argentine Republic and Chili, and western North America, from Texas and Lower California to Oregon.............. 187. **P. guarauna** (LINN.). **White-faced Glossy Ibis.**

*a*². Legs and feet comparatively short and stout, the tarsus with frontal scutellæ more or less irregular and interrupted. *Adult* with head and upper neck dark chestnut-brown, the lower neck and lower parts violet-blackish; lesser wing-coverts metallic green and bronzed purple, the back dark metallic green. *Young* with lower parts dusky, glossed with violet. Wing 10.15–12.00, culmen 3.40–5.10, tarsus 2.70–3.85, middle toe 1.80–2.30. *Hab.* Vicinity of Lake Titicaca, Peru; Chili.

P. ridgwayi (ALLEN). **Peruvian Glossy Ibis.**[1]

FAMILY CICONIIDÆ.—THE STORKS AND WOOD IBISES. (Page 122.)

Genera.

*a*¹. Bill decurved toward end, with the tip blunt and rounded; toes lengthened, the middle one at least half as long as the tarsus. (Subfamily *Tantalinæ.*)

*b*¹. Adult with whole head and part of neck naked, the skin hard and scurfy, except on top of head, which is covered with a smooth, nearly quadrate, or somewhat shield-shaped, plate; nostrils subbasal; tertials longer than primaries, and with their webs compact or normal. **Tantalus.** (Page 125.)

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[1] *Falcinellus ridgwayi* ALLEN, Bull. Mus. Comp. Zool. iii. July, 1876, 355. *Plegadis ridgwayi* RIDGW., in B. B. & R. Water B. N. Am. i. 1884, 94.

*b*². Adult with only the front part of the head (all round) naked, the skin not scurfy or corrugated; nostrils strictly basal; tertials shorter than primaries, and with their webs somewhat decomposed...... *Pseudotantalus*.[1]

*a*². Bill straight to the tip or else slightly recurved toward end, the tip pointed; toes short, the middle one much less than half as long as the tarsus. (Subfamily *Ciconiinæ*.)

*b*¹. Entire head and neck feathered, except lores and a narrow strip on each side of throat; bill straight to the tip; tail very short and deeply forked, the broad and stiffened lower tail-coverts extending far beyond its tip.. *Euxenura*.[2]

*b*². Entire head and neck (except occipital patch) naked; bill enormously large, slightly recurved toward tip; tail normal....... **Mycteria.** (Page 125.)

GENUS **TANTALUS** LINNÆUS. (Page 125, pl. XXXI., fig. 2.)

Species.

Adult: Plumage white, the remiges and tail glossy greenish black, with purple and bronze reflections; under wing-coverts pale rose-pink in breeding plumage; bill and naked scurfy skin of head and upper neck dull grayish dusky. *Young:* Head covered, except anteriorly, with rather scant, somewhat "woolly," feathers, the neck also entirely feathered; plumage of head and neck grayish brown, becoming darker on occiput, where inclining to dark sooty; rest of plumage as in adult, but white duller, or more grayish (said to be wholly replaced by dusky gray in very young birds), and black of remiges and tail less metallic. *Immature (second year?):* Head entirely bare and scurfy as in adult, but whole neck feathered, as in young; plumage intermediate. Length 35.00–45.00, wing 17.60–19.50, culmen 6.10–7.30, tarsus 7.00–8.50, middle toe 3.85–4.30. *Eggs* 2–3, 2.74 × 1.80, chalk-white, usually more or less stained, in streaks, with pale brownish. *Hab.* Whole of tropical and warm-temperate America, north to New York (casual), Ohio, Indiana, Wisconsin, Colorado, Utah, Nevada, and California.. 188. **T. loculator** LINN. **Wood Ibis.**

GENUS **MYCTERIA** LINNÆUS. (Page 125, pl. XXXII., fig. 1.)

Species.

Adult: Plumage entirely white; bill, naked skin of head and neck, with legs and feet, black, the lower part of the naked neck encircled by a collar of bright red (in life). *Young:* Plumage entirely, or prevailingly, brownish gray; occiput crested with a somewhat "bushy" tuft of blackish hair-like feathers. Length about

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[1] *Pseudotantalus* RIDGW., Pr. U. S. Nat. Mus. v. 1883, 550. Type, *Tantalus ibis* LINN.

[2] *Euxenura* RIDGW., Bull. U. S. Geol. & Geog. Surv. Terr. iv. No. 1, 1878, 250. Type, *Ardea maguari* GMEL.

4½ feet, wing 24.50–27.00, culmen 9.75–13.00, tarsus 11.25–12.50, middle toe 4.20–4.80. *Hab.* Continental tropical America, north to Texas.

189. **M. americana** Linn. **Jabiru.**

Family ARDEIDÆ.—The Herons. (Page 122.)

Genera.

a^1. Tail-feathers 10, very short, scarcely more stiff than the coverts; outer toe decidedly shorter than the inner; claws lengthened, slightly curved. (Subfamily *Botaurinæ.*) .... **Botaurus.** (Page 126.)

a^2. Tail-feathers 12, more lengthened, and decidedly more stiff than the coverts; outer toe as long as or decidedly longer than the inner; claws comparatively short and strongly curved. (Subfamily *Ardeinæ.*)

b^1. Bill comparatively long and narrow, the culmen equal to at least five times the greatest depth of the bill; plumage of the young not conspicuously different in pattern from that of the adult............ **Ardea.** (Page 128.)

b^2. Bill comparatively short and thick, the culmen equal to not more than four times the greatest depth of the bill; plumage of the young conspicuously different in pattern from that of the adult..... **Nycticorax.** (Page 132.)

Genus BOTAURUS Stephens. (Page 126, pl. XXXIII., figs. 1, 2.)

Species.

a^1. Size large (wing more than 9.50); sexes alike in coloration, and young not obviously different from adults. (Subgenus *Botaurus.*)

b^1. Neck plain ochraceous, or minutely freckled, the fore-neck striped with whitish; wing-coverts minutely freckled with different shades of ochraceous and rusty; a blackish or dull grayish stripe on side of neck; lower parts distinctly striped.

Prevailing color ochraceous, this much varied above by dense mottling and freckling of reddish brown and blackish; quills and their coverts slate-color, tipped with pale cinnamon; lower parts, including foreneck, pale buff, striped with brown; length 24.00–34.00, wing 9.80–12.00, culmen 2.50–3.20, tarsus 3.10–3.85, middle toe 2.90–3.60. *Eggs* 1.88 × 1.43, pale olive-drab, or pale isabella-color. *Hab.* Whole of temperate and tropical North America, south to Guatemala, Cuba, Jamaica, and Bermudas; occasional in British Islands.

190. **B. lentiginosus** (Montag.). **American Bittern.**

b^2. Neck transversely barred with blackish and ochraceous; wing-coverts coarsely variegated, in irregular, somewhat "herring-bone," pattern, with blackish on an ochraceous ground-color; no black or grayish stripe on side of neck; lower parts nearly immaculate; wing 10.10, culmen 3.25, tarsus 3.75, middle toe 3.75. *Hab.* Tropical America, north to Nicaragua.

B. pinnatus (WAGL.). **South American Bittern.**[1]

a^2. Size very small (wing less than 6.00); sexes more or less different in color (ex-
cept in *A. involucris?*), and young appreciably different from adults. (Sub-
(11.) genus *Ardetta* Gray.)

b^1. Upper parts not conspicuously striped; *adult males* with top of head, back, scapulars, rump, and tail uniform glossy black.

c^1. Quills tipped with cinnamon-rufous, or pale cinnamon; *adult male* with a distinct narrow stripe of buff along each side of back.

Adult male: Sides of head and neck ochraceous, deepening into chestnut on hind-neck; chin, throat, and fore-neck whitish, striped with pale buff; central portion of wing-covert region buff, surrounded by cinnamon-rufous; lower parts buff-whitish. *Adult female:* Similar to the male, but black replaced by brown, and scapular stripes much broader. *Young:* Similar to adult female, but feathers of back and scapulars tipped with buff. Length 12.00–14.25, wing 4.30–5.25, culmen 1.60–1.90, tarsus 1.50–1.75, middle toe 1.40–1.60. *Eggs* 1.20 × .93, white, or greenish white. *Hab.* Whole of temperate North America, and tropical America south to Brazil.

191. **B. exilis** (GMEL.). **Least Bittern.**

c^2. Quills without rufous or cinnamon tips; *adult males* without trace of lighter stripe along sides of back.

d^1. *Adult male:* Lower tail-coverts dull black; wing-coverts rich chestnut; neck similar, the lower parts more rufous; length (skin) 10.80, wing 4.30–4.60, culmen 1.80–2.00, tarsus 1.40–1.65. *Hab.* Florida, Ontario, Michigan, etc.

191.1. **B. neoxenus** (CORY). **Cory's Least Bittern.**[2]

d^2. *Adult male:* Lower tail-coverts white; wing-coverts pale grayish buff, becoming nearly white on greater coverts; neck similar, but darker and more tinged with buff; lower parts pale buffy, becoming white medially and posteriorly. *Adult female:* Back, scapulars, and rump umber-brown, streaked narrowly with buffy (except on lower back and rump); rest of plumage much as in adult male, but more decidedly buffy, the fore-neck conspicuously striped, the sides, etc., more narrowly striped, or streaked. Length about 12.00–13.00, wing 5.50–5.80, culmen 1.75–1.85, tarsus 1.60–1.70. *Hab.* Europe, etc.

B. minutus (LINN.). **European Least Bittern.**[3]

b^2. Upper parts conspicuously striped with black and ochraceous; quills broadly tipped with rufous; wing about 4.85, culmen 2.00. *Hab.* Southern South America.

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[1] *Ardea pinnata* "LICHT." WAGL., Isis, 1829, 663. *Botaurus pinnatus* GRAY, Gen. B. iii. 1847, 557.

[2] *Ardetta neoxena* CORY, Auk, iii. April, 1886, 262; ib. July, 1886, 408.

[3] *Ardea minuta* LINN., S. N. ed. 12, i. 1766, 240. *Botaurus minutus* BOIE, Isis, 1822, 559.

B. involucris (Vieill.). **Azara's Least Bittern.**[1]

Genus ARDEA Linnæus. (Page 126, pls. XXXIV. to XXXVI.)

Species.

(*Nest* of coarse sticks, placed usually in trees. *Eggs* plain bluish green, varying in depth of color.)

*a*¹. Culmen decidedly shorter than tarsus, the latter more than one and a half times as long as the middle toe (without claw).

*b*¹. Tarsus much less than twice as long as middle toe (without claw).

*c*¹. Wing more than 13.00.

*d*¹. Wing more than 17.00. *Adult* with scapular plumes narrowly lanceolate, with compact webs; head crested, the occiput during pairing season with two or more long, slender, compactly webbed plumes; plumes of lower neck stiffened, narrowly lanceolate, or acicular. (Subgenus *Ardea.*)

*e*¹. Color entirely pure white; length 45.00–54.00, wing 17.00–21.00, culmen 6.00–7.00, tarsus 8.00–8.75. *Eggs* 2.60 × 1.84. *Hab.* Southern Florida (chiefly on eastern side?); Cuba; Jamaica?

192. **A. occidentalis** Aud. **Great White Heron.**

*e*². Color nearly uniform bluish gray above, lower parts striped with black and white.

*f*¹. Thighs and edge of wing cinnamon-rufous.

*g*¹. Lower parts white, narrowly striped or streaked with black; tarsus more than 8.50; legs and feet olive in adult.

*h*¹. *Adult* with head entirely white, the forehead streaked with blackish. *Young:* Forehead and crown dull slate-color, narrowly streaked with white; feathers of occiput white with dusky tips; wing-coverts spotted with rusty, the lower and more posterior with large wedge-shaped white spots. Length 48.00–50.00, wing 20.00–21.00, culmen 5.95–6.50, tarsus 7.95–8.25. *Eggs* about 2.60 × 1.84. *Hab.* Florida Keys and Cape Florida; Jamaica?; accidental in southern Illinois (Mount Carmel, Sept. 11–22, 1876)... —. **A. wuerdemanni** Baird. **Würdemann's Heron.**[1]

(12.)

*h*². *Adult* with occiput and sides of crown black (as in *A. herodias*), the forehead and middle of crown pure white. *Young* not essentially different from same stage of *A. wuerdemanni?* Length about 48.00–54.00, wing 20.00–20.50, culmen 6.50–7.00, tarsus 8.50–9.00. *Eggs* about 2.65 × 1.85. *Hab.* Western Florida.

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[1] *Ardea involucris* Vieill., Enc. Méth. 1823, 1127. *Ardetta involucris* Scl. & Salv., P. Z. S. 1869, 634.

193. **A. wardi** Ridgw. **Ward's Heron.**

*g*². Lower parts black or dusky, broadly striped with white (the two colors in nearly equal proportion in young, however); tarsus not more than 8.00; legs and feet black in adult.

Adult: Occiput and sides of crown black; forehead and centre of crown pure white (exactly as in *A. wardi*). *Young:* Whole top of head dusky, some of the feathers with paler shaft-streaks; wing-coverts without white spots or distinct rufous spots. Length about 42.00–50.00, wing 17.90–19.85, culmen 4.30–6.25, tarsus 6.00–8.00. *Eggs* 3–6, about 2.50 × 1.50. *Hab.* North America in general, north to Hudson's Bay and Sitka; south throughout West Indies and Middle America, and as far as Colombia and Venezuela; Galapagos?; Bermudas.

194. **A. herodias** Linn. **Great Blue Heron.**

*f*². Thighs and edge of wing white.

*g*¹. *Adult* with occiput and sides of crown black, the forehead and centre of crown pure white (as in *A. herodias* and *A. wardi*); neck ash-gray; length about 37.00, wing about 18.50, culmen 4.80, tarsus 6.00–6.25. *Eggs* 2.40 × 1.71. *Hab.* Northern portion of eastern hemisphere; accidental in southern Greenland.

195. **A. cinerea** Linn. **European Blue Heron.**

*g*². *Adult* with entire top of head black; neck pure white; wing 18.50–20.00, culmen 5.85–6.75, tarsus 7.20–8.00. *Hab.* South America.

A. cocói Linn. **Cocoi Heron.**[1]

*d*². Wing less than 17.00. *Adult in nuptial plumage* with the scapular plumes excessively elongated, reaching far beyond end of tail, their shafts thick and stiffened, their webs decomposed; head without crest or plumes, and feathers of lower neck (in American species) soft, broad, and not lengthened; color always wholly pure white. (Subgenus *Herodias* BOIE.)

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[1] *Ardea cocoi* Linn., S. N. ed. 12, i. 1766, 237.

Length 37.00–41.00, wing 14.10–16.80, culmen 4.20–4.90, tarsus 5.50–6.80. *Eggs* 2.28 × 1.60. *Hab.* Nearly the whole of America, north (casually at least) to British Provinces and Oregon, south to Chili and Patagonia.

196. **A. egretta** GMEL. **American Egret.**

*c*². Wing less than 11.00.

*d*¹. *Adult* with occipital, jugular, and scapular plumes greatly developed, with much decomposed webs; the scapular plumes extending to or beyond the tail and recurved at tips; color always entirely pure white. (Subgenus *Garzetta* KAUP.)

Length 20.00–27.25, wing 8.20–10.50, culmen 2.08–3.65, tarsus 3.15–4.50. *Eggs* 1.68 × 1.34. *Hab.* Whole of tropical and warm-temperate America, north (more or less regularly) nearly across United States, and south to Chili and Argentine Republic.. 197. **A. candidissima** GMEL. **Snowy Heron.**

*d*². *Adult* with scapular and jugular plumes elongated, narrowly lanceolate, compact-webbed;[1] occipital plumes slender, only a few of them much elongated; color varying from uniform dark slate-blue, with maroon-colored head and neck, to wholly pure white. (Subgenus *Florida* BAIRD.)

Adult usually uniform dark slate-blue, with maroon-colored head and neck, but not unfrequently "pied" with white, or even almost wholly white, with bluish tips to longer quills. *Young* usually pure white, with longer quills tipped with slate-blue. Length 20.00–29.50, wing 9.00–10.60, culmen 2.70–3.30, tarsus 3.15–4.00. *Eggs* 1.73 × 1.28. *Hab.* Whole of tropical and warm-temperate North America (except western United States), north to Massachusetts, Illinois, Kansas, etc., south to Colombia and Guiana and throughout West Indies.

200. **A. cærulea** LINN. **Little Blue Heron.**

*b*². Tarsus twice as long as middle toe, without claw.

Adult with feathers of head and neck (excepting throat and upper fore-neck) elongated and narrowly lanceolate, most lengthened on occiput and lower fore-neck; scapular plumes much lengthened (extending beyond end of tail), with shafts straight and stiffened, the webs decomposed, but with the hair-like fibrillæ rather close together; color uniform, or else irregularly patched with white and slaty. (Subgenus *Dichromanassa* RIDGWAY.)

*c*¹. *Adult* plain slate-color, the head and neck cinnamon- or vinaceous-rufous. *Young* plain grayish, tinged here and there with rusty. Length 27.00–32.00, wing 11.90–13.60, culmen 3.30–4.00, tarsus 4.90–5.75.

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[1] Some of the longer scapular plumes are sometimes loose-webbed.

Eggs 1.97 × 1.46. *Hab.* Warmer portions of eastern United States, north to Florida and southern Illinois (vicinity of Cairo); Mexico (both coasts, including Lower California) and Guatemala; Cuba; Jamaica .... 198. **A. rufescens** GMEL. **Reddish Egret.**

c^2. Color entirely pure white, at all ages; size of *A. rufa.* *Hab.* Gulf coast, from Florida to Texas, and south to Honduras and Guatemala (both (13.) coasts); Cuba..................... —. **A. pealei** BONAP. **Peale's Egret.**

a^2. Culmen equal to or longer than tarsus, the latter less than one and a half times as long as the middle toe (without claw).

b^1. Wing more than 8.00; culmen and tarsus more than 3.00.

Adult with an occipital tuft of several moderately lengthened lanceolate, compact-webbed feathers; jugular feathers broadly lanceolate, with compact webs, and distinct outlines; scapular plumes lengthened, straight and hair-like, extending to a little beyond the tail; color never wholly white. (Subgenus *Hydranassa* BAIRD.)

Adult: Head, neck, and upper parts bluish plumbeous, the lanceolate plumes with a chalky or glaucous cast, the color darker on head and neck; plumes of occiput and nape rich maroon purplish, the longer feather among the former white; jugular plumes rich maroon purplish and plumbeous-blue; chin and upper part of throat pure white, continued in streaks, mixed with rufous and plumbeous, down the fore-neck; "train" (*i.e.*, scapular plumes) light drab; lower parts plain white. *Young:* Head and neck chiefly light rusty, the malar region, chin, and throat pure white; fore-neck streaked white and rusty; lower parts, rump, and upper tail-coverts pure white; upper parts (except rump, etc.) plumbeous, the back tinged and the wing-coverts spotted with rusty. Length 23.00–28.00, wing 8.35–10.80, culmen 3.30–4.15, tarsus 3.20–4.15. *Eggs* 1.78 × 1.29. *Hab.* Warmer portions of eastern North America, north, casually, to New Jersey, Indiana, etc.; whole of Mexico (including Lower California) and West Indies.

199. **A. tricolor ruficollis** (GOSSE). **Louisiana Heron.**

b^2. Wing not more than 8.00; culmen and tarsus less than 3.00.

Adult with scapular plumes and feathers of top of head moderately lengthened, lanceolate, soft, and with compact webs; jugular plumes broad, soft, and blended; color never white. (Subgenus *Butorides* BLYTH.)

c^1. Neck maroon-chestnut, rufous, or rusty.

d^1. Head and neck (except top of former) uniform chestnut-rufous, without white markings on throat and fore-neck; wing-coverts very narrowly edged with rusty. *Young:* Plumage nearly uniform rusty brown. Wing 6.40–7.00, culmen 2.20–2.75, tarsus 1.85–2.30. *Hab.* Cuba. **A. brunnescens** GUNDL. **Brown Heron.**[1]

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[1] *Ardea brunnescens* "GUNDL. MSS.," LEMB. Aves de Cuba, 1850, 84, pl. 12. *Butorides brunnescens* BAIRD, B. N. Am. 1858, 677 (in text).

d^2. Throat and fore-neck striped with whitish.

Adult: Whole top of head glossy dark bottle-green or greenish black; rest of head, with greater part of neck, rich chestnut, varying in tone from cinnamon to maroon; scapular plumes plumbeous, or glaucous, glossed with green, and with whitish shafts; wing-coverts metallic bottle-green distinctly bordered with buff or whitish; innermost primaries tipped narrowly with whitish; lower parts plain grayish. *Young:* Much like adult, but top of head usually streaked anteriorly with rusty; sides of head and neck streaked with ochraceous or buff, on a duller rusty ground; lower parts whitish, striped with dusky; light borders to wing-coverts broader, the two or three median rows of coverts marked with wedge-shaped spots or streaks of white. Length 15.50–22.50, wing 6.30–8.00, culmen 2.00–2.55, tarsus 1.75–2.15. *Eggs* 1.50 × 1.14. *Hab.* Whole of temperate North America, West Indies, Middle America, and northern South America, to Colombia and Venezuela; north to Ontario and Oregon; Bermudas.

(14.) 201. **A. virescens** LINN. **Green Heron.**

c^2. Neck ash-gray.

Otherwise much like *A. virescens*. *Hab.* South America, except northern portion.

A. striata LINN. **Streaked Heron.**

GENUS **NYCTICORAX** STEPHENS. (Page 126, pl. XXXVII., figs. 1, 2; pl. XXXVIII., fig. 1.)

Species.

COMMON CHARACTERS.—*Adults:* Prevailing colors bluish gray, black, and white, the head (except just after breeding season) ornamented with several very much lengthened narrow white plumes; bill black, and iris reddish. *Young,* brownish, striped longitudinally with white. *Eggs* pale bluish green.

a^1. Culmen about as long as the tarsus; gonys nearly straight, and lateral outlines of bill slightly concave; tarsus but little longer than middle toe; scapulars broad, blended. (Subgenus *Nycticorax.*)

Adult: Top of head, back, and scapulars uniform glossy greenish black; forehead, sides of head, chin, throat, and lower parts generally white, often tinged with delicate cream-yellow; neck (except in front) and sides pale ash-gray; wings, rump, upper tail-coverts, and tail, deep ash-gray. *Immature (second year?):* Similar to adult, but scapulars and interscapulars dull ash-gray, like the wings, and white of forehead obscured by

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[1] *Ardea striata* LINN., S. N. ed. 10, i. 1758, 144. *Butorides striatus* RIDGW., in B. B. & R. Hist. N. Am. B. i. 1884, 51.

blackish of crown; colors generally more sombre, with median lower parts less purely white. *Young:* Above light brown, tinged with cinnamon (especially on quills), each feather (except quills and tail-feathers) marked with a median tear-shaped or wedge-shaped stripe of white, the quills with small white spots at tips; tail-feathers plain ash-gray; sides of head and neck, and entire lower parts, striped with grayish brown and white, the chin and throat plain white medially. Length about 23.00–26.00, wing 11.00–12.80, culmen 2.80–3.10, tarsus 3.10–3.40, middle toe (without claw) 2.65–3.10. *Eggs* 2.01 × 1.47. *Hab.* Nearly the whole of America, except Arctic regions.

202. **N. nycticorax nævius** (Bodd.). **Black-crowned Night Heron.**

a^2. Culmen much shorter than tarsus (only a little longer than middle toe); gonys convex, and lateral outlines of bill straight, or sometimes even perceptibly convex; tarsus much longer than middle toe; scapulars lengthened, narrow (but not pointed), somewhat loose-webbed. (Subgenus *Nyctanassa* Stejn.)

Adult: Top of head and elongated patch on side of head, white, the first often stained with rusty brown, and in freshly-killed or living specimens deeply tinted with delicate primrose-yellow; rest of head black; plumage in general bluish plumbeous, plain beneath, but on upper parts striped with black. *Young:* Above sooty grayish brown, streaked with dull white or pale buff, the streaks more wedge-shaped on wing-coverts; lower parts soiled whitish, striped with brownish gray. Length 22.00–28.00, wing 10.50–12.65, culmen 2.50–3.00, tarsus 3.10–4.20, middle toe 2.20–2.55. *Eggs* 1.96 × 1.42. *Hab.* Whole of tropical and subtropical America, including West Indies; north regularly to Missouri, Illinois, Indiana, and North Carolina, irregularly or casually much farther.

203. **N. violaceus** (Linn.). **Yellow-crowned Night Heron.**

ORDER PALUDICOLÆ.—THE CRANES, RAILS, AND COURLANS. (Page 2.)

Families.

a^1. Size very large (wing 17.50, or more); head partly naked and warty in adult, or else with ornamental plumes; hind toe small, much elevated; middle toe less than half as long as the tarsus. (Suborder *Grues.*) **Gruidæ.** (Page 134.)

a^2. Size medium to very small (wing less than 14.50); head entirely feathered, or else with only a frontal "shield" naked; hind toe lengthened (nearly as long as the first division of the middle toe), inserted nearly on a level with the anterior toes; middle toe nearly as long as the tarsus. (Suborder *Ralli.*)

b^1. Wing 11.00–14.20; first quill shorter than seventh, its inner web very narrow, except near end; tail-feathers well developed, firm. **Aramidæ.** (Page 135.)

b^2. Wing less than 10.00; first quill longer than seventh (usually longer than sixth), its inner web normal; tail-feathers almost rudimentary (nearly hidden by the coverts), soft; bill and feet very variable in form. **Rallidæ.** (Page 136.)

FAMILY GRUIDÆ.—THE CRANES. (Page 134.)

Genera.

(Characters same as those given for the Family) .... **Grus.** (Page 134.)

GENUS GRUS PALLAS. (Page 134, pl. XXXIX., figs. 1, 2.)

Species.

(*Nest* on ground in marsh or wet meadow. *Eggs* pale olive or olive-buffy, spotted with brown, reddish brown, and purplish gray.)

a^1. Tarsus 11.00, or more; bill stout, its depth through the base about one-fourth the length of the culmen; distance from posterior end of nostril to base of upper mandible much more than one-half the distance from anterior border of nostril to tip of upper mandible. *Adult* with plumage white, and cheeks naked.

Adult: Plumage pure white, the quills black. *Young:* General color white, but this overlaid by patches of light cinnamon or rusty, the upper parts chiefly of this color; head entirely feathered. Length

50.00–54.00, extent 92.00, wing 22.00–25.00, culmen 5.35–5.80, depth of bill at base 1.40, tarsus 11.00–12.00, middle toe 4.25. *Eggs* 4.04 × 2.50. *Hab.* Interior of North America north to the Saskatchewan, south to Florida and central Mexico.

204. **G. americana** (Linn.). **Whooping Crane.**

a^2. Tarsus 10.00, or less; bill more slender, its depth through base less than one-fourth the length of the culmen; distance from posterior end of nostril to base of upper mandible less than one-half the distance from anterior end of nostril to tip of upper mandible. *Adult* deep slate-gray or brownish, the cheeks normally feathered.

Adult: Entire plumage slate-gray, varying from a bluish or plumbeous shade to brownish, sometimes tinged or even extensively washed with rusty, the primaries darker, the cheeks and throat paler, sometimes almost white. *Young:* Entirely brown, more or less washed, especially on upper parts, with tawny cinnamon or rusty; head entirely feathered.

b^1. Larger: Length 40.00–48.00, wing 21.00–22.50 (21.83), culmen 5.15–6.00 (5.47), depth of bill at base .95–1.10 (1.01), tarsus 9.90–10.65 (10.25), middle toe 3.40–3.60 (3.50), bare part of tibia 4.60–5.00 (4.78). *Eggs* 3.98 × 2.44. *Hab.* United States, chiefly from Mississippi Valley west to Pacific coast, south into Mexico, and eastward along Gulf coast to Florida and Georgia.

206. **G. mexicana** (Müll.). **Sandhill Crane.**

b^2. Smaller: Length about 35.00, wing 17.50–20.00 (18.70), culmen 3.04–4.20 (3.61), depth of bill at base .70–.80 (.77), tarsus 6.70–8.44 (7.57), middle toe 2.60–3.36 (2.91), bare portion of tibia 2.90–3.50 (3.13). *Eggs* 3.66 × 2.28. *Hab.* Northern North America, from Hudson's Bay to Alaska, migrating south through western United States. east of Rocky Mountains, to Mexico.

205. **G. canadensis** (Linn.). **Little Brown Crane.**

FAMILY ARAMIDÆ.—THE COURLANS. (Page 134.)

Genera.

(Characters same as those of the Family).............. **Aramus.** (Page 135.)

GENUS ARAMUS VIEILLOT. (Page 135, pl. XXXVIII., fig. 2.)

Species.

Common Characters.—Prevailing color dark brown (the quills and tail-feathers glossed with purplish), the head and neck (sometimes back and lower parts also) striped with white. *Nest* on bushes or clumps of rank grasses or reeds along side of marsh or stream.

a^1. White stripes extending over back, wing-coverts, and lower parts. *Young* similar to adult, but white stripes much narrower and less sharply defined, and the brown color lighter and duller. *Downy young:* "Covered with coarse tufty feathers of a black color." Length 25.00–28.00, wing 11.00–13.00, culmen 3.50–4.75, tarsus 3.50–5.20, middle toe 3.30–3.50. *Eggs* 4–7 (sometimes as many as 15 ?), 2.32 × 1.70, pale dull buff, spotted, daubed, and stained with brown and purplish gray. *Hab.* Greater Antilles, Florida, coast of Gulf of Mexico, and south to Costa Rica (both sides).

207. **A. giganteus** (Bonap.). **Limpkin.**

a^2. White markings confined to head and neck. Wing 12.50–14.20, culmen 4.30–4.70, tarsus 4.60–5.20. *Hab.* Eastern South America.

A. scolopaceus (Gmel.). **Brazilian Courlan.**[1]

FAMILY **RALLIDÆ**.—THE RAILS, GALLINULES, AND COOTS. (Page 134.)

Genera.

a^1. No frontal process, or shield-like extension of bill over forehead. (Subfamily *Rallinæ.*)
  b^1. Bill slender, as long as, or longer than, the tarsus..... **Rallus.** (Page 136.)
  b^2. Bill stout, not more than two-thirds as long as the tarsus (usually much less).
    c^1. Middle toe (without claw) not shorter than tarsus; base of gonys not forming a decided angle.......................... **Porzana.** (Page 139.)
    c^2. Middle toe shorter than tarsus; base of gonys forming a decided angle.. **Crex.** (Page 140.)
a^2. Forehead covered by a shield-like extension of the culmen.
  b^1. Toes without lateral lobes or flaps. (Subfamily *Gallinulinæ.*)
    c^1. Nostril small, oval; middle toe (without claw) shorter than tarsus; inner posterior face of tarsus covered by a single row of large quadrate scutellæ................................ **Ionornis.** (Page 140.)
    c^2. Nostril elongated, slit-like; middle toe (without claw) longer than tarsus; inner posterior face of tarsus covered with several irregular rows of small hexagonal scales............... **Gallinula.** (Page 141.)
  b^2. Toes provided with conspicuous lateral lobed membranes, or "flaps." (Subfamily *Fulicinæ.*)... **Fulica.** (Page 141.)

GENUS **RALLUS** LINNÆUS. (Page 136, pl. XL., fig. 1.)

Species.

Common Characters.—Above brownish or grayish, striped, more or less distinctly, with darker; chin and upper throat whitish; fore-neck, chest, and breast, plain cinnamon, varying to buffy grayish; sides, flanks, and axillars barred with brown or dusky and whitish. *Downy young:* Entirely uniform glossy black. *Nest* a platform-like structure of dried grasses, sedges, etc., supported in tufts of grass or sedges in marshes or ponds. *Eggs* 6–15, white, buffy white, dull buff, or pale brownish buff, rather sparingly spotted and speckled with rusty brown and purplish gray.

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[1] *Ardea scolopacea* Gmel., S. N. i. pt. ii. 1788, 647. *Aramus scolopaceus* Vieill., Nouv. Dict. N. H. vii. 1817, 301.

a^1. Larger (wing more than 5.00).

b^1. Ground-color of upper parts grayish (varying from ash-gray to olive-gray).

c^1. Breast, etc., pale cinnamon-buff, tinged with ashy across chest; darker stripes on back, etc., usually indistinct (sometimes almost obsolete); flanks, etc., grayish brown, broadly barred with white, but without darker bars; length 13.50–15.60, wing 5.40–6.30 (5.79), culmen 2.10–2.60 (2.36), depth of bill at narrowest part .22–.30, at base .47–.50 (.49), tarsus 1.85–2.27 (2.00), middle toe 1.70–2.00 (1.83). *Eggs* 1.72 × 1.20. *Hab.* Salt-water marshes of Atlantic coast, north, regularly, to Long Island, casually to Massachusetts.

(15.) 211. **R. longirostris crepitans** (GMEL.). **Clapper Rail.**

c^2. Breast, etc., deeper cinnamon; darker stripes on back, etc., very distinct; flanks, etc., darker or deeper brown, more narrowly barred with white, and with more or less distinct narrow dusky bars bordering the white ones.

d^1. Above ash-gray, broadly and sharply striped with blackish brown or brownish black; breast, etc., dull cinnamon, strongly shaded with olive-gray laterally; sides of neck olive-gray, shaded with ash-gray, this passing into slate-gray on sides of head, especially behind eye; ground-color of flanks, etc., darker brown; length about 12.00–14.00, wing 5.60–5.70 (5.65), culmen 2.10–2.45 (2.27), least depth of bill .22–.28 (.25), tarsus 1.95–2.00 (1.97), middle toe 1.75–1.80 (1.78). *Hab.* Coast of Louisiana; western Florida?...... 211*a*. **R. longirostris saturatus** HENSH.

(16.) **Louisiana Clapper Rail.**

d^2. Above olive-gray or grayish olive, broadly, but usually not sharply, striped with blackish brown; breast, etc., uniform deep cinnamon, not strongly shaded with gray laterally, the sides of the neck dull grayish cinnamon, and sides of head without pure gray; ground-color of flanks, etc., lighter brown; length 17.00–18.00, wing 6.20–6.70 (6.63), culmen 2.25–2.50 (2.40), least depth of bill .30–.35 (.33), depth at base .50, tarsus 2.10–2.30 (2.18), middle toe 1.90–2.15 (2.04). *Eggs* 1.75 × 1.24. *Hab.* Salt-water marshes of Pacific coast (Lower California to Oregon).

210. **R. obsoletus** RIDGW. **California Clapper Rail.**

b^2. Ground color of upper parts distinctly brownish (varying from deep raw-umber brown or olive-brown to fulvous-brown), very distinctly, and usually sharply, striped with brownish black.

c^1. Flanks, etc., with the lighter (pure white) bars very broad (averaging

.10 or more in width), the ground-color varying from clear brown (darker next to white bars) to brownish black; upper parts varying from fulvous-brown to an almost ochrey tint, the blackish stripes very sharply defined; breast, etc., deep cinnamon, usually distinctly paler posteriorly and medially; length 17.00–19.00, wing 5.90–6.80 (6.43), culmen 2.12–2.50 (2.35), least depth of bill .27–.35 (.30), depth at base .50–.55 (.52), tarsus 2.10–2.40 (2.28), middle toe 1.85–2.50 (2.07). *Eggs* 1.63 × 1.22. *Hab.* Fresh-water marshes of eastern United States, north to Wisconsin, southern Michigan, Ohio, etc. (casually to Massachusetts, Maine, and Ontario), west to the Great Plains.................................. 208. **R. elegans** AUD. **King Rail.**

*c*². Flanks, etc., with lighter bars very narrow (averaging decidedly less than .10 wide), the ground-color varying from clear hair-brown to cinnamon-brown; upper parts umber-brown or olive, distinctly, but usually not sharply, striped with blackish brown; breast, etc., uniform deep cinnamon, not distinctly paler posteriorly or medially.

*d*¹. Flanks hair-brown, distinctly barred with pure white, the white bars bordered on each side by a blackish bar; ground-color of upper parts olive; lores dark brown, bordered above by a stripe of pale cinnamon; length about 15.00–16.00, wing 5.70–6.40 (6.03), culmen 2.25–2.50 (2.37), least depth of bill .29–.35 (.31), depth at base .50, tarsus 1.88–2.10 (1.93), middle toe 1.75–1.90 (1.81). *Hab.* Eastern coast of Lower California (La Paz; Espiritu Santo Island, etc.).
209. **R. beldingi** RIDGW. **Belding's Rail.**

*d*². Flanks cinnamon-brown, indistinctly barred with pale cinnamon and rusty whitish, but without darker bars; ground-color of upper parts umber-brown; lores rather pale brown, bordered above by a white stripe; wing 5.90–6.00 (5.95), culmen 2.00–2.40 (2.17), least depth of bill .22–.30 (.26), tarsus 1.80–2.08 (1.93), middle toe 1.70–1.92 (1.81). *Hab.* Central and western Mexico.
R. tenuirostris (LAWR.). **Mexican King Rail.**[1]

*a*². Smaller (wing less than 4.50).

Above olive-brownish, broadly striped with blackish; wing-coverts deep rusty, or chestnut-rufous; breast, etc., deep cinnamon; flanks and axillars dusky, barred with white. *Immature* specimens with lower parts mixed more or less extensively with black. Length 8.12–10.50, wing 3.90–4.25, culmen 1.45–1.60, tarsus 1.30–1.40, middle toe 1.20–1.40. *Eggs* 1.24 × .94. *Hab.* Whole of temperate North America, north to British Columbia and Hudson's Bay, south to Guatemala and Cuba.
212. **R. virginianus** LINN. **Virginia Rail.**

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[1] *Rallus elegans* var. *tenuirostris* LAWR., Am. Nat. viii. Feb. 1874, 111.

GENUS **PORZANA** VIEILLOT. (Page 136, pl. XLI., figs. 1–3.)

Species.

a^1. Secondaries without white.

b^1. Wing more than 4.00; above olive-brownish, striped with black. (Subgenus *Porzana.*)

c^1. Neck and breast olive, speckled with white; flanks brown, narrowly and irregularly barred with white. *Adult:* Broad superciliary stripe, malar region, chin, and throat, uniform grayish; ear-coverts, neck, and chest light hair-brown, irregularly speckled with white. *Young:* Superciliary stripe finely speckled with white; malar region, chin, and throat whitish, speckled with brown, the breast and belly washed with pale buff. Length about 8.50, wing 4.20–4.50, culmen .68–.72, tarsus 1.20–1.30, middle toe 1.25–1.35. *Eggs* 8–12, 1.32 × .95, dull buffy, spotted with vandyke-brown and purplish gray. *Hab.* Northern portion of eastern hemisphere; occasional in Greenland....... 213. **P. porzana** (LINN.). **Spotted Crake.**

c^2. Neck and breast without white specks; flanks broadly and regularly barred with white and slate-color. *Adult:* Anterior portion of head, with chin and throat, uniform black; top of head olive-brown, with a broad median stripe of black; rest of head and neck, with chest and breast, plain plumbeous. *Young:* Lores and superciliary stripe brownish, the chin and throat whitish; rest of head and neck, with chest and breast, light brownish. *Downy young:* Uniform dull black, the shorter down interspersed with numerous long, glossy black, hair-like filaments; on throat, a tuft, directed forwards, of stiff, coarse, orange-colored, bristle-like feathers. Length 7.85–9.75, wing 4.15–4.30, culmen .75–.90, tarsus 1.25–1.35, middle toe 1.30–1.45. *Eggs* 8–12, 1.23 × .89, brownish buff, rather sparsely spotted with brown and purplish gray. *Hab.* Whole of temperate North America, breeding from northern United States northward; in winter, south to West Indies, Middle America, and northern South America......................... 214. **P. carolina** (LINN.). **Sora.**

b^2. Wing less than 3.75; above dusky, sometimes speckled with white. (Subgenus *Creciscus* CABANIS.)

c^1. Wing 2.95 or more; back speckled with white.

Adult: Head, neck, and lower parts plain dark plumbeous, or slate-color, darker (sometimes nearly black) on top of head; belly and under tail-coverts brownish black, barred with white; hind-neck and back dark chestnut-brown, marked with small dots and irregular bars of white. *Young:* Similar to adult, but breast, etc., dull grayish, the throat whitish, and top of head tinged with reddish brown. *Downy young:* "Entirely bluish black." Length 5.00–6.00, wing 2.50–3.20, culmen .50–.60, depth of bill through base .20–.25, tarsus .85–.90, middle toe .80–1.00. *Eggs* about 9, 1.01 × .79, white, or buffy white, sprinkled, or finely speckled, chiefly on larger end, with dark reddish brown or chestnut. *Hab.* United States (north to Oregon, Kansas, Illinois, Massachusetts, etc.), and south through West Indies, Middle America, and greater part of South America, to Chili.. 216. **P. jamaicensis** (GMEL.). **Black Rail.**

c^2. Wing 2.50; back without white markings.

Wing 2.50, culmen .60, depth of bill through base .15, tarsus .75, middle toe .85. *Hab.* Farallone Islands, California.
216*a*. **P. coturniculus** BAIRD. **Farallone Rail.**

a^2. Secondaries white. (Subgenus *Coturnicops* BONAPARTE.)

Head, neck, and breast ochraceous; flanks dusky, barred with whitish; under tail-coverts cinnamon; under wing-coverts and axillars white; upper parts ochraceous, broadly striped with black and narrowly barred with white; length 6.00–7.75, wing 3.00–3.60, culmen .50–.60, tarsus .80–1.00, middle toe .82–1.00. *Eggs* 6 or more, 1.12 × .83, creamy buff, densely sprinkled and speckled on larger end with rusty brown. *Hab.* Eastern North America, north to Nova Scotia and Hudson's Bay, west to Utah and Nevada; Cuba; Bermudas.
215. **P. noveboracensis** (GMEL.). **Yellow Rail.**

GENUS **CREX** BECHSTEIN. (Page 136, pl. XLI., fig. 4.)

Species.

Adult: Above light brown, striped with black; wings rusty or reddish brown with a few whitish bars or spots on greater coverts; axillars and under wing-coverts light cinnamon, the latter edged with white; head ash-gray, the crown and a broad stripe on side of head light brown; throat, belly, and ventral region white, fore-neck and chest pale brownish or drab; sides and under tail-coverts barred with brown and white. *Young:* Similar, but without any gray on head. *Downy young:* Uniform dark sooty brown, the head blackish. Length about 10.00–10.50, wing 5.70–6.00, culmen .85–.90, tarsus 1.50–1.60, middle toe 1.30. *Eggs* about 11, 1.49 × 1.07, light buff, or pale olive-buff, spotted, longitudinally, with cinnamon-brown, or rusty, and purplish gray. *Hab.* More northern portions of eastern hemisphere; accidental in eastern North America (Greenland, Bermudas, Long Island, etc.).
217. **C. crex** (LINN.). **Corn Crake.**

GENUS **IONORNIS** REICHENBACH. (Page 136, pl. XLII., fig. 1.)

Species.

Adult: Head, neck, and lower parts slaty bluish purple, darker on belly and thighs; lower tail-coverts white; upper parts bright olive-green, changing to bright verditer-blue toward the purple of the lower parts; wings brighter green than back, shaded with bright verditer-blue; frontal shield dusky or bluish; bill bright red, tipped with yellow. *Young:* Above light brown, tinged with greenish on wings; beneath pale fulvous or buffy, the belly whitish; bill dull yellowish, and frontal shield much smaller than in adult. *Downy young:* Said to be entirely black. Length 12.50–14.00, wing 7.00–7.50, culmen (including frontal shield) 1.85–1.95, tarsus 2.25–2.50, middle toe 2.25–2.35. *Eggs* 6–10, 1.55 × 1.13, pale cream-color, or creamy white, speckled (sometimes also sparingly spotted), chiefly round larger end, with brown and purplish gray. *Hab.* Nearly the whole of tropical and warm-temperate America, north, casually or irregularly nearly across the United States east of the Great Plains, but apparently wholly absent from the Pacific coast, including Lower California .... 218. **I. martinica** (Linn.). **Purple Gallinule.**

Genus **GALLINULA** Brisson. (Page 136, pl. XLII., fig. 2.)

Species.

Uniform plumbeous, sometimes mixed with whitish on lower parts and washed with brown on back, the edge of the wing, the lateral under tail-coverts, and broad stripes on flanks, white. *Summer adult:* Bill and frontal shield bright vermilion-red in life, the former tipped with greenish yellow; belly uniform plumbeous. *Winter adult:* Similar, but frontal shield smaller, and belly suffused with whitish. *Young:* Similar to winter adult, but frontal shield rudimentary and, with the bill, brownish; whole extent of lower parts, including sides of head, suffused with whitish, the throat sometimes almost wholly white; white flank stripes less distinct (sometimes nearly obsolete). *Downy young:* Glossy black, the lower parts sooty along the median line; throat and cheeks interspersed with silvery white hairs. Length 12.00–14.50, wing 6.85–7.25, culmen (to end of frontal shield) 1.70–1.85, tarsus 2.10–2.30, middle toe 2.50–2.60. *Eggs* 8–13, 1.74 × 1.19, buff, pale buff, brownish buff, or buffy brown, sparsely spotted with dark brown. *Hab.* Whole of tropical America and temperate North America, north to British Provinces.
219. **G. galeata** (Licht.). **Florida Gallinule.**

Genus **FULICA** Linnæus. (Page 136, pl. XL., fig. 2.)

Species.

Common Characters.—Uniform slaty or plumbeous, the head and neck darker (nearly black in adults); edge of wing whitish; bill whitish in adults. *Eggs* pale dull buff, finely dotted or sprinkled with brownish black and purplish gray.

*a*¹. Only the edge of the wing and a very narrow edge to first quill white; entire bill and frontal shield whitish; length about 16.00, wing 7.70–8.80, culmen (including frontal plate) 1.70–2.00, tarsus 2.25–2.35, middle toe 2.85–3.15. *Eggs* 2.11 × 1.47. *Hab.* Europe, Asia, and northern portions of Africa; accidental in Greenland.......................... 220. **F. atra** Linn. **European Coot.**

*a*². Lateral and posterior lower tail-coverts and tips of secondaries white; bill with a dark brownish spot near end of each mandible.

*b*¹. Frontal shield dark brown. *Summer adult:* Bill (in life) milk-white, tinged with bluish terminally, a spot near the end of each mandible and the frontal shield dark brown; belly uniform slaty plumbeous. *Winter adult:* Similar, but frontal shield reduced in size, and the belly suffused with whitish. *Young:* Most like winter plumage, but lower parts much suffused with whitish, especially on throat and belly; frontal shield rudimentary, and bill, in life, dull flesh-color, tinged with olive-greenish, the spots obsolete (dull light brownish in dried skins). *Downy young:* Blackish, the head and neck ornamented with orange- or salmon-colored crisp filamentous bristles, the upper parts more sparsely covered with similar but paler (whitish or pale orange-buff) filaments; bill orange-red, the upper mandible tipped with black. Length 13.00–16.00, wing 7.25–7.60, culmen (to commencement of frontal shield) 1.25–1.60, tarsus 2.00–2.20, middle toe 2.45–2.65. *Eggs* 6–12, 1.91 × 1.32. *Hab.* Whole of North America, Middle America, and most of West Indies; north to Greenland and Alaska, south to Veragua (and Trinidad?).

221. **F. americana** (Gmel.). **American Coot.**

*b*². Frontal shield whitish (pale brownish in dried skins), like bill, oval or elliptical, much wrinkled; bill more slender; otherwise, very similar to *F. americana*. *Hab.* Lesser Antilles (Guadeloupe and St. John's).

F. caribæa Ridgw. **Caribbean Coot.**[1]

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[1] *Fulica caribæa* Ridgw., Proc. U. S. Nat. Mus. vii. Sept. 17, 1884, 359.

Order LIMICOLÆ.—The Shore Birds.

(Page 2.)

Families.

- a^1. Tarsus more than twice as long as middle toe, with claw; naked portion of thigh much longer than middle toe, with claw.... **Recurvirostridæ.** (Page 146.)
- a^2. Tarsus less than twice as long as middle toe, with claw; naked portion of thigh shorter than middle toe, with claw.
  - b^1. Claws normal.
    - c^1. Toes with distinct, usually scalloped, lateral membranes; tarsus extremely compressed .... **Phalaropodidæ.** (Page 143.)
    - c^2. Toes without distinct lateral membranes; tarsus not unusually compressed.
      - d^1. Front of tarsus covered by a continuous row of transverse scutellæ.
        - e^1. Bill slender, with blunt and more or less rounded (sometimes expanded) tip, the exposed culmen longer than middle toe without claw........................ **Scolopacidæ.** (Page 147.)
        - e^2. Bill stout, culmen arched toward tip, its exposed portion shorter than middle toe (without claw), or else pointed and wedge-shaped at tip................. **Aphrizidæ.** (Page 179.)
      - d^2. Front of tarsus covered with small hexagonal or irregular scales.
        - e^1. Bill shorter than tarsus, not compressed, the anterior portion of culmen more or less distinctly arched. **Charadriidæ.** (Page 172)
        - e^2. Bill longer than tarsus, much compressed terminally, the culmen not arched.......... **Hæmatopodidæ.** (Page 181.)
  - b^2. Claws excessively lengthened, straight, and acute, that of the hind toe longer than the toe itself............................. **Jacanidæ.** (Page 183.)

Family PHALAROPODIDÆ.—The Phalaropes. (Page 143.)

Genera.

- a^1. Bill broad, flattened, somewhat widened toward end; nostrils separated from loral feathers by a space equal to the depth of the upper mandible at base. **Crymophilus.** (Page 144.)
- a^2. Bill slender, nearly cylindrical, not perceptibly widened toward end; nostrils separated from loral feathers by a space equal to much less than the depth of the upper mandible at the base.................... **Phalaropus.** (Page 144.)

GENUS **CRYMOPHILUS** VIEILLOT. (Page 143, pl. XLIII., fig. 3.)

Species.

Adult female in summer: Entire lower parts deep purplish cinnamon; sides of head white; fore part and top of head uniform dark plumbeous or blackish; hind-neck plain cinnamon and plumbeous; back and scapulars light ochraceous or buff, striped with black. *Adult male in summer:* Similar to the female, but top of head and hind-neck streaked with ochraceous (or buffy) and blackish, the white on side of head more restricted and less abruptly defined, and size somewhat less. *Winter plumage:* Head, neck, and lower parts pure white, the occiput and space about eyes dark plumbeous; upper parts uniform pearl-gray, or light plumbeous. *Young:* Top of head, hind-neck, back, and scapulars dull black, the feathers edged with ochraceous; wing-coverts, rump, and upper tail-coverts plumbeous, the middle coverts bordered with pale buff, the tail-coverts with ochraceous; head and neck (except as described above) and lower parts white, the throat and chest tinged with brownish buff. *Downy young:* Above bright tawny buff, marked with broad irregular stripes of black; broad superciliary stripes bright tawny buff, separated anteriorly only by a narrow and somewhat interrupted dusky streak; crown bright umber-brown bordered with black; chin and throat light fulvous-buff, changing to smoky buff on chest; rest of lower parts dull whitish. Length 7.50–8.75, wing 5.25–5.50, culmen .80–.95, tarsus .80–.85, middle toe .75–.80. *Eggs* 3–4, 1.24 × .86, pale drab, olive-drab, olive-buff, or pale brown, heavily spotted with dark brown. *Hab.* Northern portions of northern hemisphere, breeding far northward; in America, south, in winter, to Middle States, Ohio Valley, and Cape St. Lucas.

222. **C. fulicarius** (LINN.). **Red Phalarope.**

GENUS **PHALAROPUS** BRISSON. (Page 143, pl. XLIII., figs. 1, 2.)

Species.

*a*¹. Wing less than 4.50; tarsus less than 1.00; web between outer and middle toes extending to or beyond second joint of the latter; lateral membrane of all the toes broad and distinctly "scalloped." (Subgenus *Phalaropus.*)

Adult female in summer: Above dark plumbeous, the back striped with ochraceous or buff; wings dusky, the greater coverts broadly tipped with white; lower parts white; chest and sides of neck rufous. *Adult male in summer:* Similar to the female, but colors duller, the rufous almost confined to sides of neck, and less distinct, the chest chiefly mixed white and grayish. *Winter plumage:* Forehead, superciliary stripe, sides of head and neck, with lower parts generally, pure white; top of head grayish, the feathers with dusky shaft-streaks and whitish borders; a blackish spot in front of eye, and side of head, from beneath eye, across ear-coverts mixed dusky and grayish white; upper parts chiefly grayish; sides of chest washed or clouded with grayish. *Young:* Top of head dusky, with or without streaks; back and scapulars blackish, distinctly bordered with buff or ochraceous; middle wing-coverts bordered with buff or whitish; forehead, supra-auricular stripe, lores, and lower parts white, the chest and sides of breast sometimes suffused with dull brownish; ear-coverts dusky. *Downy young:* Above bright tawny, the rump with three parallel stripes of black, enclosing two of paler fulvous than the ground-color; a triangular patch of brown on crown, bounded irregularly with blackish; a black line over ears; throat and rest of head pale tawny; rest of lower parts white, becoming grayish posteriorly. Length 7.00–8.00, wing 4.00–4.45, culmen .80–.90, tarsus .75–.80, middle toe .65–.75. *Eggs* 3–4, 1.20 × .82, pale olive-drab or olive-buff, thickly speckled or spotted with dark brown. *Hab.* Northern portions of northern hemisphere, breeding far northward.......................... 223. **P. lobatus** (Linn.). **Northern Phalarope.**

*a*². Wing more than 4.50; tarsus more than 1.00; web between outer and middle toes not reaching to second joint of the latter; lateral membrane of all the toes narrow and not distinctly "scalloped." (Subgenus *Steganopus* Vieill.)

Adult female in summer: Forehead and crown pale bluish gray, the former with a blackish line along each side; occiput and hind-neck white, changing to plumbeous-gray on back; stripe on side of head and continued broadly down side of neck deep black, changing gradually on lower portion into rich dark chestnut, this continued backward along each side of back; short stripe above lores and eyes, chin, cheeks, and throat, pure white; fore-neck and chest soft buffy cinnamon; rest of lower parts white; length 9.40–10.00, wing 5.20–5.30, culmen 1.30–1.35, tarsus 1.30–1.35, middle toe .90–1.00. *Adult male in summer:* Smaller and much duller in color than the female, with the beautiful tints and pattern of the latter but faintly indicated; length 8.25–9.00, wing 4.75–4.80, culmen 1.25, tarsus 1.20–1.25, middle toe .90. *Winter plumage:* Above plain ash-gray; upper tail-coverts, superciliary stripe, and lower parts white, the chest and sides of breast shaded with pale gray. *Young:* Top of head, back, and scapulars dusky blackish, the feathers distinctly bordered with buff; wing-coverts also bordered with pale buff or whitish; upper tail-coverts, superciliary stripe, and lower parts, white, the neck tinged with buff. *Downy young:* Bright tawny, paler beneath, the belly nearly white; occiput and hind-neck with a distinct median streak of black, on the former branching laterally into two narrow irregular lines; lower back and rump with three broad black stripes; flanks with a black spot, and region of tail crossed with a wide bar of the same. *Eggs* 3–4, 1.28 × .90, pale grayish buff varying to brownish buff, thickly speckled and spotted with dark brown or brownish black. *Hab.* Temperate North America, but chiefly the interior; north to eastern Oregon, the Saskatchewan, and Nova Scotia; south, during migrations, to Brazil and Patagonia. (Not recorded from Pacific slope of California, Oregon, or Washington Territory.)

224. **P. tricolor** (Vieill.). **Wilson's Phalarope.**

FAMILY **RECURVIROSTRIDÆ.**—THE AVOCETS AND STILTS.

(Page 143.)

Genera.

*a*¹. Hind toe present; anterior toes all webbed; bill decidedly recurved toward tip. **Recurvirostra.** (Page 146.)

*a*². Hind toe absent; no web between inner and middle toes, and that between outer and middle toes occupying less than half the space; bill very slightly or not at all recurved toward tip.................... **Himantopus.** (Page 146.)

GENUS **RECURVIROSTRA** LINNÆUS. (Page 146, pl. XLIV., fig. 1.)

Species.

*a*¹. Outer scapulars, rump, and upper tail-coverts, also part of secondaries and greater wing-coverts, white.

Wings (except secondaries and terminal half of greater coverts), inner scapulars, and adjacent feathers of back, brownish black; lower parts, rump, outer scapulars, and middle of back, white; tail ashy white or pale ashy. *Summer adult:* Head (except anteriorly), neck, and chest light cinnamon. *Winter plumage:* Head, neck, and chest white, tinged, more or less, with pale bluish gray, especially on top of head and hind-neck. *Young:* Similar to winter plumage, but quills slightly tipped with whitish, scapulars, etc., tipped or transversely mottled with buffy or pale fulvous, and hind-neck tinged with light rufous. Length 15.50–18.75, wing 8.50–9.00, culmen 3.40–3.65, tarsus 3.70–3.80, middle toe 1.60–1.70. *Eggs* 3–4, 1.93 × 1.35, pale olive, olive-buff, or drab-buff (rarely creamy buff), thickly spotted (sometimes sparsely lined also) with dark brown or black. *Hab.* Temperate North America, north, in the interior, to the Saskatchewan and Great Slave Lake; south, in winter, to Guatemala, Cuba, and Jamaica.

225. **R. americana** GMEL. **American Avocet.**

*a*². No white on upper parts, except head, neck, and rump. *Hab.* Andes of Chili.

R. andina PHILIPPI & LANDB. **Chilian Avocet.**[1]

GENUS **HIMANTOPUS** BRISSON. (Page 146, pl. XLIV., fig. 2.)

Species.

*a*¹. White of forehead not extending over the crown; black of hind-neck continuous with that of the back.

Adult male: Forehead, spot behind eye, lores, cheeks, entire lower parts (including fore-neck, throat, and chin), rump, and upper tail-coverts, pure white (sometimes tinged with pinkish in breeding season); rest of head and neck, back, scapulars, and wings, uniform glossy greenish black; tail pale ashy; iris crimson, and legs and feet delicate lake-red or rose-pink, in life. *Adult female:* Similar to the male, but back and scapulars brownish slate, and black of other portions duller. *Young:* Similar to adult female, but feathers of back, scapulars, and tertials bordered with buff or dull whitish, the blackish of head and neck finely mottled with the same. *Downy young:* Above light fulvous-grayish, mottled with dusky, the back and rump marked with several large black blotches; head, neck, and lower parts fulvous-whitish, the top of head and hind-neck grayish, the crown with a median black streak and occiput with several spots of blackish. Length 13.50–15.50, wing 8.50–9.00, culmen 2.50, tarsus 4.00, middle toe 1.37. *Eggs* 3–4, 1.79 × 1.23, similar in coloration to those of *Recurvirostra americana*. *Hab.* Temperate North America, from northern United States southward; south, in winter, to Peru, northern Brazil, and West Indies.

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[1] *Recurvirostra andina* PHILIPPI & LANDBECK, Weigm. Archiv, 1863, 131. HARTING, Ibis, 1874, 257, pl. 9.

226. **H. mexicanus** (MÜLL.). **Black-necked Stilt.**

a^2. White of forehead extending back to and including the occiput; black of nape separated from that of the back by a white bar or "collar."
Otherwise, similar to *H. mexicanus*. *Hab.* Southern South America (Brazil, Argentine Republic, Chili, etc.).

H. brasiliensis BREHM. **Brazilian Stilt.**

FAMILY SCOLOPACIDÆ.—THE SNIPES, SANDPIPERS, ETC.

(Page 143.)

(*Nest* usually on ground, in meadows, marshes, or along banks of streams. *Eggs* 2–4.)

Genera.

a^1. Back of tarsus with a continuous row of transverse scutellæ.
  b^1. Ears situated directly underneath the eyes; tip of upper mandible thickened, with cutting-edges brought near together; plumage the same at all stages and seasons. (Subfamily *Scolopacinæ*.)
    c^1. Thighs entirely feathered; top of head with transverse bands.
      d^1. First quill longer than second, and broad like the rest; outer webs of quills spotted .... **Scolopax.** (Page 149.)
      d^2. Three outermost quills abruptly much shorter and narrower than the fourth; outer webs of quills plain. **Philohela.** (Page 150.)
    c^2. Lower part of thighs naked; top of head with longitudinal stripes. **Gallinago.** (Page 150.)
  b^2. Ears situated decidedly posterior to the eyes; tip of upper mandible thin, with cutting-edges far apart; plumage very different in winter and summer, and young different in color from adult. (Subfamily *Tringinæ*.)

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[1] *Himantopus brasiliensis* BREHM, Vög. Deutschl. 1831, 684.

- c^1. Bill only slightly or not at all widened at tip.
  - d^1. Hind-toe present.
    - e^1. No trace of web between anterior toes.
      - f^1. Exposed culmen longer than middle toe, with claw;[1] inner webs of quills and under primary coverts not mottled. **Tringa.** (Page 152.)
      - f^2. Exposed culmen shorter than middle toe, with claw; inner webs of quills and under primary coverts beautifully mottled.......................... **Tryngites.** (Page 169.)
    - e^2. Middle toe united at base to one or both of the lateral toes by a distinct web.
      - f^1. Tail more than half as long as the wing, graduated for as much as the length of the culmen. **Bartramia.** (Page 168.)
      - f^2. Tail not more than half as long as the wing, and if graduated, the graduation not more than one-half the length of the culmen.
        - g^1. Tail longer than the exposed culmen.
          - h^1. Wing less than 4.00. (All anterior toes webbed at base.).............. **Ereunetes.** (Page 161.)
          - h^2. Wing not less than 4.00.
            - i^1. Exposed culmen less than one-fifth as long as the wing...... **Pavoncella.** (Page 168.)
            - i^2. Exposed culmen more than one-fifth as long as the wing.
              - j^1. Bill narrow at tip, where hard and smooth on top.
                - k^1. Wing less than 4.50. **Actitis.** (Page 169.)
                - k^2. Wing more than 4.50.
                  - l^1. Axillars uniform grayish or dusky.
                    - m^1. Quills entirely dark-colored; no web between inner and middle toes at base.. **Heteractitis.** (Page 167.)
                    - m^2. Quills with a conspicuous white patch at base; a distinct web between inner and middle toes, at base.. **Symphemia.** (Page 167.)

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[1] Except sometimes in *Tringa maculata.*

l^2. Axillars white, or barred with white and dusky.

Totanus. (Page 164.)

j^2. Bill slightly widened at tip, which (at least in dried specimen) is pitted or wrinkled on top.

Micropalama. (Page 152.)

g^2. Tail shorter than exposed culmen.

h^1. Terminal portion of both upper and lower mandibles grooved medially and pitted or wrinkled (as in *Gallinago*); wing less than 7.00.

Macrorhamphus. (Page 150.)

h^2. Terminal portion of upper and lower mandibles entirely smooth and hard; wing more than 7.00........................ **Limosa.** (Page 162.)

d^2. Hind-toe absent.................................... **Calidris.** (Page 162.)

c^2. Bill excessively widened and flattened at tip, its greatest width equal to about half the length of the exposed culmen.

Eurynorhynchus. (Page 160.)

a^2. Back of tarsus covered with small hexagonal scales. (Subfamily *Numeninæ.*) Bill decidedly arched or decurved; wing 8.00 or more.

Numenius. (Page 170.)

GENUS **SCOLOPAX** LINNÆUS. (Page 147, pl. XLV., fig. 1.)

Species.

Adult: Above rusty brown, everywhere variegated with dusky and light grayish and buffy, the middle line of the back and the scapulars marked with large irregular black spots or blotches, the scapulars much mixed posteriorly with light grayish and the sides of the interscapular region almost continuously light grayish, forming a pair of well-defined V-shaped marks on each side of the rusty black-spotted areas; quills with outer webs spotted with pale cinnamon in transverse series, the exterior quill broadly edged with pure white; forehead and fore part of crown brownish gray; hind part of crown with occiput black, crossed by two narrow bands of light rusty or ochraceous, and bordered anteriorly and posteriorly, respectively, by two others; a dusky stripe from corner of mouth to eye; lower parts in general pale fulvous-grayish irregularly barred with dark brown. *Downy young:* General color rusty ochraceous, the upper parts marked with large blotch-like areas of deep rusty, and an indistinct band of the same across chest. Length about 13.50, wing 8.00, culmen 3.00–3.25, tarsus 1.50, middle toe 1.30. *Eggs* 1.71 × 1.37, rounded ovate, pale dull buff or dull buffy white, spotted with raw umber and purplish gray. *Hab.* Northern parts of eastern hemisphere; occasional in eastern North America......................... 227. **S. rusticola** LINN. **European Woodcock.**

GENUS **PHILOHELA** GRAY. (Page 147, pl. XLV., fig. 2.)

Species.

Adult: Occiput with three transverse bands of black alternating with three much narrower ones of ochraceous, or yellowish rusty; upper parts varied with pale ashy, rusty, and black, the latter in form of large spots; quills plain brownish gray; head, except as described above, chiefly plain cinnamon-ashy, relieved by a dusky line from corner of mouth to eyes and another across ear-coverts; lower parts plain light cinnamon, much tinged with light ashy. *Downy young:* General color light rusty buff, unvaried on lower parts; broad stripe down rump, and other markings on upper parts very dark chestnut, or seal-brown. Length 10.50–11.75, wing 4.80–5.70, culmen 2.50–nearly 3.00, tarsus 1.25, middle toe 1.37. *Eggs* 1.51 × 1.14, short ovate or rounded ovate, buffy, spotted with rusty brown and purplish gray. *Hab.* Eastern United States, north to British Provinces, west to the Plains; accidental in Bermudas................. 228. **P. minor** (GMEL.). **American Woodcock.**

GENUS **GALLINAGO** LEACH. (Page 147, pl. XLV., fig. 2.)

Species.

COMMON CHARACTERS.—Tail with a subterminal band of rufous, succeeded by a black bar; top of head blackish, divided medially by a line of pale buff; feathers of back, etc., blackish, broadly edged exteriorly with pale buff; under wing-coverts, axillars, and sides sharply and broadly barred with slate-color on a pure white ground; length 10.00–12.00. *Eggs* pale olive, olive-grayish, or pale olive-brown, heavily spotted, especially on larger end, with deep brown and purplish gray.

*a*¹. Tail-feathers usually 14; under wing-coverts with white prevailing, the dark bars everywhere narrower than the white interspaces; culmen usually more than 3.80; wing 5.00–5.30, culmen 2.80–3.00, tarsus 1.25–1.45, middle toe 1.15–1.40; outer tail-feathers much broader than in *G. delicata.* *Eggs* 1.57 × 1.11. *Hab.* Europe and northern Asia and Africa; accidental in Bermudas, and occasional in Greenland.
229. **G. gallinago** (LINN.). **European Snipe.**

*a*². Tail-feathers usually 16; under wing-coverts everywhere broadly barred with slate-color, these bars, as well as those on the axillars, nearly as broad as the white interspaces; culmen usually less than 2.75; wing 4.90–5.60, culmen 2.50–2.70, tarsus 1.20–1.30, middle toe 1.10–1.35. *Eggs* 1.55 × 1.09. *Hab.* Whole of North and Middle America, and West Indies, and northern South America; breeding from northern United States northward.
230. **G. delicata** (ORD). **Wilson's Snipe.**

GENUS **MACRORHAMPHUS** LEACH. (Page 149, pl. XLVI., fig. 1.)

Species.

COMMON CHARACTERS.—Rump and upper tail-coverts white, the former with U- or V-shaped marks, the latter with transverse bars, of dusky; tail grayish dusky, or slaty, barred with white. *Summer adult:* Sides of head and neck, throat, fore-neck, chest, breast, and sides (sometimes entire lower parts), light cinnamon, usually more or less flecked, speckled, or barred with dusky; top of head and hind-neck streaked with pale cinnamon, or buffy, and dusky; back, scapulars, etc., varied with dusky and light cinnamon, or buffy. *Winter plumage:*[1] Belly, anal region, and indistinct superciliary stripe, white; rest of plumage plain ash-gray, intermixed more or less with white on breast and sides; wing-coverts bordered with whitish. *Young:*[1] Back, scapulars, and tertials varied with blackish and light brown or clay-color, the latter chiefly along edges of feathers; lower parts soiled white, tinged, especially on breast, with pale brownish, the chest and sides indistinctly speckled with dusky.

*a*¹. Web between inner and middle toes very indistinct; culmen not more than 3.00, wing not more than 6.00, and tarsus not more than 1.75; lower back entirely white; axillars barred to tips with dusky, and under wing-coverts much varied with same; tertials, scapulars, etc., more or less barred with light cinnamon or buffy, in summer plumage. (Subgenus *Macrorhamphus.*)

*b*¹. Length about 10.00–11.00, wing 5.25–5.90 (average 5.65), culmen 2.00–2.55 (2.30), tarsus 1.20–1.55 (1.35), middle toe .90–1.05 (.95). *Summer adult* with belly whitish, the breast and sides speckled with dusky. *Eggs* 1.65 × 1.13, light buffy olive, distinctly spotted and speckled, especially on larger end, with deep brown. *Hab.* Eastern North America, breeding far northward; Nushagak River, Alaska (straggler?).

231. **M. griseus** (GMEL.). **Dowitcher.**

*b*². Length 11.00–12.50, wing 5.40–6.00 (average 5.74), culmen 2.10–3.00 (2.72), tarsus 1.35–1.75 (1.58), middle toe .95–1.15 (1.01). *Summer adult* with cinnamon-color of lower parts deeper and much more uniform, covering entire belly; sides distinctly barred with dusky. *Eggs* 1.74 × 1.21, pale olive-grayish, boldly spotted, especially over larger end, with deep vandyke-brown. *Hab.* North America in general (except northeastern portion), but chiefly the Western Province, breeding in Alaska, etc., north to Arctic Ocean... 232. **M. scolopaceus** (SAY). **Long-billed Dowitcher.**

*a*². Web between inner and middle toes very large (almost equal in extent to that between outer and middle toes); culmen more than 3.00, wing more than 6.00, and tarsus more than 1.75; lower back dusky, the feathers edged and margined with white; axillars white, barred or spotted toward base only with dusky, and under wing-coverts almost entirely white; tertials, scapulars, etc., edged, but not barred, with pale cinnamon, in summer plumage. (Subgenus *Pseudoscolopax* BLYTH.[2])

M. semipalmatus (JERD.). **Semipalmated Snipe.**[3]

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[1] Winter plumage and young of *M. semipalmatus* not seen by me, and perhaps different in style of coloration from the same stages of the American species.

[2] *Pseudoscolopax* BLYTH, Jour. As. Soc. Beng. xvii. 1848, 252. Type, *Macrorhamphus semipalmatus* JERD.

[3] *Pseudoscolopax semipalmatus* "JERD." BLYTH, Jour. As. Soc. Beng. xvii. 1848, 252.

GENUS **MICROPALAMA** BAIRD. (Page 149, pl. XLIII., fig. 4.)

Species.

Summer adult: Upper parts varied with black, pale gray, and light buff, the first prevailing on back and scapulars; wing-coverts grayish, margined with paler; upper tail-coverts white, marked with dusky streaks and bars; top of head dusky, streaked with whitish; ear-coverts and patch on each side of occiput, light rusty; streak of dusky from eye to corner of mouth; rest of head, with neck, dull white, streaked with dusky, the lower parts whitish barred with dusky. *Winter plumage:* Upper parts uniform ash-gray, except tail-coverts, wings, and tail, which are as in summer; superciliary stripe and lower parts white, the chest, sides of neck, and lower tail-coverts streaked with grayish. *Young:* Back and scapulars dusky, all the feathers bordered with pale buff or buffy whitish; wing-coverts bordered with pale buff and white; upper tail-coverts nearly immaculate white; lower parts soiled white, the chest and sides more or less strongly washed with buff, and indistinctly streaked with grayish. Length 7.50–9.25, wing 5.00–5.30, culmen 1.55–1.75, tarsus 1.55–1.70. *Eggs* 1.42 × 1.00, pale grayish buff, or grayish buffy white, boldly spotted with rich vandyke-brown and purplish gray. *Hab.* Eastern North America breeding far northward; south, in winter, to Brazil, Peru, and West Indies; Bermudas during migrations.......... 233. **M. himantopus** (BONAP.). **Stilt Sandpiper.**

GENUS **TRINGA** LINNÆUS. (Page 148, pl. XLVII., figs. 1–3; pl. XLVIII., figs. 1, 2.)

Species.

*a*¹. Wing 6.00 or more; middle pair of tail-feathers not longer than the rest. (Subgenus *Tringa.*)

*b*¹. Wing less than 7.00; *summer adult* with lower parts uniform light cinnamon. *Summer adult:* Above light grayish, irregularly varied with black and tinged with pale rusty; rump and upper tail-coverts white, irregularly barred and spotted with dusky; distinct superciliary stripe and lower parts generally, uniform pale vinaceous-cinnamon, paler on belly; under wing-coverts, axillars, flanks, and lower tail-coverts white, usually more or less marked with dusky. *Winter plumage:* Above plain ash-gray, the feathers with indistinct darker shaft-streaks; rump and upper tail-coverts white, barred with dusky; lower parts white, the throat, fore-neck, chest, and sides streaked and otherwise marked with dusky. *Young:* Above ash-gray, each feather bordered with whitish and with a subedging of dusky; lower parts whitish, sometimes tinged with dull buffy on breast, etc., the neck and chest streaked and flecked with dusky, the sides indistinctly barred and spotted with the same; otherwise, like adult. *Downy young:* "Forehead warm buff, with a central black line; over the eye a double black line; crown, from centre backwards, black, slightly varied with rufous, and dotted with buff; nape creamy buff, slightly varied with blackish; upper parts . . . black slightly varied with reddish brown and profusely dotted with creamy white; under parts very slightly washed with warm buff." (DRESSER.) Length 10.00–11.00, wing 6.50, tail 2.50. *Hab.* Sea-coasts throughout northern hemisphere and nearly throughout southern hemisphere in winter; in North America, shores of the Great Lakes also.

234. **T. canutus** LINN. **Knot.**

b^2. Wing more than 7.00; summer adult with lower parts white, heavily spotted anteriorly with dusky; wing 7.40, tail 2.80, culmen 1.60, tarsus 1.35, middle toe .85. *Hab.* Coast of Eastern Asia (Japan, etc.).

T. crassirostris TEMM. & SCHLEG. **Large-billed Sandpiper.**[1]

a^2. Wing less than 6.00; middle tail-feathers usually longer and more pointed than the rest.

b^1. Tarsus shorter than middle toe (with claw), the latter decidedly shorter than exposed culmen. (Subgenus *Arquatella* BAIRD.)

c^1. Summer adult and young with little if any rusty on upper parts, the former without dusky patch or extensive clouding on breast.

Summer adult: Top of head dusky streaked with dull light buffy; scapulars and interscapulars blackish, irregularly spotted and indented with dull buff, and bordered terminally with whitish; fore-neck and chest white, streaked with dusky; breast dull light grayish, spotted with darker. *Winter plumage:* Upper parts uniform sooty blackish, glossed with purplish, the scapulars, interscapulars, and wing-coverts bordered terminally with dark plumbeous-gray; chest uniform mouse-gray, or brownish plumbeous, other lower parts white. *Young:* Above dusky, the scapulars, interscapulars, and wing-coverts bordered with pale buffy or whitish. *Downy young:* Above hair-brown, lighter and grayer on hind neck, the brown irregularly marbled with black, the wings, back, and rump thickly sprinkled with white downy flecks; head grayish white, tinged with fulvous, variously marked with black, the lores having two distinct longitudinal streaks; lower parts dull grayish white. Length 8.00–9.50, wing 4.85–5.40 (5.06), culmen 1.10–1.45 (1.20), tarsus .90–1.00 (.99). *Eggs* 1.44 × 1.02, pale olive, varying to greenish or brownish or even buffy, spotted and clouded with various shades of brown. *Hab.* Sea-coasts and shores of larger inland waters of Europe and eastern North America, breeding far northward; south, in winter, to Middle States and Great Lakes............. 235. **T. maritima** BRÜNN. **Purple Sandpiper.**

c^2. Summer adult and young with much rusty on upper parts, the former with a more or less distinct patch, or extensive clouding, of dusky on breast.

d^1. Smaller and darker colored. *Summer adult:* Upper parts dusky, with purplish gloss, the top of head streaked with rusty, the scapulars and interscapulars widely bordered by a brighter shade of the same; fore-neck and chest irregularly clouded with pale buff or soiled white and sooty plumbeous, the breast more coarsely clouded, with more or less of a blackish patch on each side. *Winter plumage:* Hardly distinguishable from corresponding stage of *T. maritima*, but lighter borders to feathers of upper parts of a clearer, more bluish plumbeous, and the grayish of the chest more varied or broken by white. *Young:* Scapulars and interscapulars conspicuously bordered with bright rusty, ochraceous, and whitish; wing-coverts broadly bordered with pale buff or whitish; breast and sides buffy white, streaked with dusky. *Downy young:* Above bright rusty fulvous, irregularly marbled with black, the ornamental velvety flecks coarser and less purely white than in *T. maritima;* head light fulvous, marked as in *T. maritima;* sides distinctly tinged with fulvous. Length 7.50–9.00, wing 4.50–5.15 (4.86), culmen .98–1.25 (1.13), tarsus .88–1.00 (.95). *Eggs* 1.46 × 1.00, pale olive-buff, varying to light brownish buff, spotted longitudinally, and somewhat spirally, with vandyke-brown, or deep umber, these darker markings sometimes prevailing over the ground-color. *Hab.* Aleutian Islands and coasts of Bering's Sea, north to Kowak River, Alaska, west to Commander Islands, Kamtschatka.

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[1] *Tringa crassirostris* TEMM. & SCHLEG., Faun. Jap. Aves, 1847, 107, pl. 14.

236. **T. couesi** Ridgw. **Aleutian Sandpiper.**

d^2. Larger and lighter colored. *Summer adult:* Top of head broadly streaked with buff; scapulars and interscapulars widely bordered with bright ochraceous or ochraceous-rufous; fore-neck and chest pure white, sparsely streaked with brownish gray; breast white, streaked anteriorly and clouded posteriorly with dusky, the latter forming more or less of a patch on each side. *Winter plumage:* Above light plumbeous or ashy, the scapulars and interscapulars darker centrally and with paler borders; wing-coverts edged with pure white; chest with white prevailing. *Young:* Similar to corresponding stage of *T. couesi*, but colors much paler, with light borders to feathers of back, etc., broader, the dark centres correspondingly decreased. *Downy young:* Similar to that of *T. couesi*, but paler in color, the dark streaks on lores not reaching to the eye. Length about 9.50–10.00, wing 5.00–5.40 (5.16), culmen 1.15–1.45 (1.33), tarsus .95–1.00 (.98). *Eggs* 1.50 × 1.07, light brownish buff, heavily spotted with rich vandyke-brown and clouded with purplish gray. *Hab.* Prybilof Islands, Bering's Sea; adjacent coast of Alaska, south of Norton Sound, in winter.

237. **T. ptilocnemis** Coues. **Prybilof Sandpiper.**

b^2. Tarsus longer than middle toe and claw, or else toes very slender, without distinct lateral membrane.

c^1. Exposed culmen not longer than tarsus (or else exceeding it by not more than half the length of the basal phalanx of the middle toe), and less than half as long as the tail. (Subgenus *Actodromas* KAUP.)

d^1. Wing more than 4.50.

e^1. Rump and median upper tail-coverts plain brownish black or dusky.

f^1. Shafts of all the quills white for a portion of their length; exposed culmen shorter than tarsus. *Summer adult:* Top of head bright rusty, streaked with black; scapulars and interscapulars rusty, tipped with pale grayish brown and white, and broadly striped with black; superciliary stripe, malar region, chin, and throat, white, streaked and flecked with dusky; fore-neck and chest buff broadly streaked and spotted with dusky; rest of lower parts white, with V-shaped marks of grayish brown, except on belly. *Winter plumage:* Above grayish brown (more rusty on top of head), streaked and striped with dusky; superciliary stripe and lower parts dull white; chest and sides of breast pale grayish buff, the former indistinctly streaked with dusky, lower tail-coverts with dusky shaft-streaks. *Young:* Whole top of head bright rusty, sharply streaked with black; scapulars, etc., bright ochraceous-rusty, striped with blackish and bordered terminally with white; superciliary stripe, malar region, chin, throat, belly, and lower tail-coverts white, the first two finely streaked with dusky, the last with dusky shaft-streaks. Length about 7.50–9.00, wing 4.90–5.50, culmen .95–1.05, tarsus 1.10–1.25. *Hab.* Western coasts and islands of Pacific Ocean, from Australia to Kamtschatka and Alaska (numerous and probably breeding).................. 238. **T. acuminata** (HORSF.).
Sharp-tailed Sandpiper.

f^2. Shaft of outer quill, only, white; exposed culmen longer than tarsus. *Summer adult:* Above light clay-color or brownish buff, broadly striped with black; fore-neck and chest light buffy grayish, broadly streaked with dusky; chin, upper part of throat, and lower parts from breast backward, plain white. *Winter plumage:* Similar to summer dress, but upper parts more uniform, with blackish markings less distinct, the lighter tints less rusty or buffy. *Young:* Much like summer adult, but lighter tints above more rusty, the scapulars and outermost interscapulars tipped exteriorly with white, the chest, etc., more buffy and more narrowly streaked. Length 8.00–9.50, wing about 5.00–5.50, culmen 1.10–1.20, tarsus 1.00–1.10. *Eggs* 1.44 × 1.02, pale grayish buff varying to pale olive-greenish, boldly and heavily blotched with rich vandyke-brown and clouded with purplish gray. *Hab.* Nearly the whole of America, but in summer confined to Arctic and subarctic districts; occasional in Europe.

239. **T. maculata** Vieill. **Pectoral Sandpiper.**

e^2. Rump dusky, the feathers bordered with pale grayish, buffy, or whitish.

f^1. Upper tail-coverts all white, but sometimes marked with dusky.

g^1. Wing less than 5.50. *Summer adult:* Top of head buffy, broadly streaked with black; back and scapulars mixed light brownish gray and grayish buff, tinged more or less with rusty ochraceous, and broadly striped with blackish, these markings more wedge-shaped on scapulars; upper tail-coverts white, often nearly or quite immaculate, sometimes with a few, mostly concealed, sagittate or V-shaped, marks of dusky; superciliary stripe and lower parts white; sides of head and neck, fore-neck, chest, and sides, streaked with dusky, these streaks broadest and most distinct on chest, sparser, larger, and more cuneate or V-shaped on flanks. *Winter plumage:* Upper parts plain brownish gray, with indistinct narrow mesial streaks of dusky; otherwise as in summer, but streaks on chest, etc., less distinct. *Young:* Scapulars and interscapulars blackish, margined terminally with white and laterally with rusty, those of middle of back (longitudinally) also tipped with rusty; feathers of top of head and rump, also tertials, margined with rusty; wing-coverts bordered with pale grayish buff; otherwise like winter plumage, but chest, etc., suffused with buffy. Length 6.75–8.00, wing 4.90–5.00, culmen .90–1.00, tarsus .95–1.00. *Eggs* 1.37 × .94, light olive or olive-brownish, spotted (usually rather finely) with deep brown and dull purplish gray. *Hab.* Eastern North America, breeding far northward; in winter, south through West Indies and over

eastern South America, to Falkland Islands; occasional in Europe....... 240. **T. fuscicollis** Vieill.
Bonaparte's Sandpiper.

g^2. Wing more than 5.50. *Summer adult:* Similar to corresponding stage of *T. fuscicollis*, but ground-color of upper parts brownish gray, with only the least trace of ochraceous on some of the longer scapulars, and upper tail-coverts conspicuously varied with broad V-shaped marks of grayish dusky; length about 9.50, wing 5.80, culmen 1.25, tarsus 1.20. *Hab.* Long Island, New York (only one specimen known, obtained May 24, 1833).
—. **T. cooperi** Baird. **Cooper's Sandpiper.**

f^2. Median upper tail-coverts plain dusky.

Summer adult: Crown pale grayish buff, broadly streaked with brownish black; scapulars and interscapulars irregularly spotted with brownish black and pale grayish buff, the former largely predominating; chest pale grayish buff, streaked and spotted with dusky grayish brown; superciliary stripe, chin, and throat white, the first finely but sparsely streaked with dusky; lower parts posterior to chest plain white. *Winter plumage:* Above plain buffy grayish brown, the feathers with rather indistinct dusky mesial streaks; feathers of rump and median upper tail-coverts dusky, bordered terminally with dull buffy; lower parts dull white, the sides of neck, chest, and sides of breast strongly washed or suffused with dull buffy. *Young:* Above dull grayish buff, the scapulars and interscapulars dusky centrally and margined terminally with white; top of head streaked with dusky; otherwise much as in winter plumage, but chest streaked with dusky. Length 7.00–7.60, wing 4.60–4.85, culmen .90–1.00, tarsus 1.00. *Eggs* 1.30 × .93, light creamy buff, sometimes tinged with rusty, thickly speckled and spotted with deep reddish brown or chestnut. *Hab.* America in general, but chiefly the interior; breeding along arctic coast, and migrating in winter south to Chili and Argentine Republic.
241. **T. bairdii** Coues. **Baird's Sandpiper.**

d^2. Wing less than 4.00.

e^1. Middle toe, without claw, shorter than exposed culmen; shafts of all the quills more or less white.[1] *Summer adult:* Scapulars and interscapulars bordered and irregularly indented with rusty ochraceous, these lighter markings sometimes extended nearly or quite to the shaft, thus dividing the black into more or less completely separated spots; tertials broadly edged with rusty ochraceous; rump and upper tail-coverts plain brownish black, the outermost feathers of the latter partly or entirely white; top of head rusty ochraceous, broadly streaked with black; fore-neck and chest dull brownish white, streaked with dusky; rest of lower parts plain white. *Winter plumage:* Above plain brownish gray, with dusky shaft-streaks; chest pale grayish, very indistinctly streaked with darker; rest of lower parts plain white. *Young:* Similar to summer adults, but scapulars and outermost interscapulars with white tips to outer webs, and lacking the concealed ochraceous bars; lower parts more as in winter plumage. Length 5.00–6.75, wing 3.50–3.75, culmen .75–.92, tarsus .75. *Eggs* 1.15 × .83, pale grayish buffy, varying to pale brownish, thickly spotted, speckled, or sprinkled with deep chestnut and dull purplish gray. *Hab.* America in general, but breeding only in arctic and subarctic districts.

242. **T. minutilla** Vieill. **Least Sandpiper.**

d^2. Middle toe, without claw, longer than exposed culmen; shafts of all the quills, except first, wholly dark brown. *Summer adult:* Very similar to corresponding stage of *T. minutilla*, but feathers of back more broadly edged with tawny ochraceous, and scapulars more broadly edged with a brighter, more rusty shade of the same, these feathers without any trace of bars or indentations of the lighter color. *Winter plumage*, not seen. *Young*, hardly distinguishable from summer adult. Length about 5.50–6.20, wing 3.45–3.65, culmen .70–.80, tarsus .85–.90. *Hab.* Asia, breeding toward arctic coast; accidental (?) in Alaska (Otter Island, Bering's Sea, June 8, 1885).

242. 1. **T. damacensis** (Horsf.). **Long-toed Stint.**[2]

c^2. Exposed culmen exceeding tarsus by at least half the length of the middle toe, without claw, and more than two-thirds as long as tail.

d^1. Tarsus less than one and a half times as long as middle toe, without claw; median upper tail-coverts dusky; lower parts white and blackish in summer adult. (Subgenus *Pelidna* CUVIER.)

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[1] To this section belong also the type of the subgenus, *T. minuta* Leisl.; also, *T. temminckii* Leisl., and *T. ruficollis* Pall., of the northern portions of the eastern hemisphere.

[2] *Totanus damacensis* Horsf., Tr. Linn. Soc. xiii. 1821, 129. *Tringa damacensis* Swinh., P. Z. S. 1863, 316. Ridgw. Auk, iii. 1886, 275 (Otter Island, Alaska; Chas. H. Townsend). *Actodromas damacensis* Stejn., Orn. Expl. Kamtschat. 1885, 116 (Bering Island, Kamtschatka).

e^1. *Summer adult:* Above light dull rusty or tawny, streaked and spotted with blackish; anterior lower parts white, or grayish white, streaked with dusky; belly covered by a more or less continuous patch of blackish. *Winter plumage:* Above plain ash-gray or brownish gray, sometimes with indistinct dusky shaft-streaks; an indistinct superciliary stripe and lower parts white, the neck and chest indistinctly streaked with grayish, the sides and flanks sometimes also sparsely streaked. *Young:* Back and scapulars dusky, the feathers broadly bordered with rusty, ochraceous, or buffy, this becoming paler (often whitish) on tips of some feathers; wing-coverts bordered with buffy; top of head light rusty, streaked with blackish; sides of head and neck dull buffy, indistinctly streaked with dusky; lower parts white, the breast and belly spotted with black.

f^1. Smaller and duller in color. *Summer adult* with back varied with dull ochreous or buffy, and blackish of belly not in strong contrast with speckled or otherwise varied dull grayish of breast. *Downy young:* "Covered with rather close down; crown velvety black, this color narrowing to a point on the forehead, and margined all around with buffy white; hind crown slightly spotted with white; upper parts deep black slightly varied with rufous, and dotted here and there with white; sides of the head white with a warm buffy tinge; a dark streak passes from the base of the bill over the eye, and another below it, and behind the eye there is a dark patch; rest of under-parts grayish white." (DRESSER.) Length about 7.50, wing 4.30–4.75, culmen 1.15–1.40, tarsus .85–1.00, middle toe .70–.75. *Eggs* pale olive-buff, spotted, somewhat spirally (sometimes speckled), with different shades of vandyke-brown and purplish gray. *Hab.* Europe, etc.; accidental or casual in eastern North America (west side of Hudson's Bay).... 243. **T. alpina** (LINN.). **Dunlin.**

f^2. Larger and brighter colored. *Summer adult* with back, etc., varied with bright rusty ochraceous, and black of belly conspicuously contrasted with nearly immaculate grayish white of breast; length 7.60–8.75, wing 4.60–4.95, culmen 1.40–1.75, tarsus 1.00–1.15, middle toe .70–.80. *Eggs* 1.43 × 1.01, dull brownish or grayish buff or olive-buff, blotched, spotted, and stained with chestnut-brown. *Hab.* North America in general, breeding far northward; eastern Asia.... 243*a*. **T. alpina pacifica** (Coues). **Red-backed Sandpiper.**

*d*². Tarsus one and a half times as long as the middle toe, with claw; upper tail-coverts entirely white; head, neck, and lower parts rufous or chestnut in summer adult. (Subgenus *Ancylocheilus* Kaup.)

Summer adult: Head, neck, and lower parts (except anal region and lower tail-coverts), deep cinnamon-rufous or chestnut; upper parts varied with blackish and rusty. *Winter plumage:* Above plain brownish gray, with indistinct dusky shaft-streaks; superciliary stripe, upper tail-coverts, and lower parts, white, the chest indistinctly streaked with grayish. *Young:* Back and scapulars dusky, the feathers edged with dull buffy or light ochraceous, and bordered terminally with whitish; lesser and middle wing-coverts bordered terminally with dull buff; otherwise much like winter plumage, but chest and sides of breast washed with dull buff. Length about 7.00–9.00, wing 4.80–5.20, culmen 1.38–1.60, tarsus 1.10–1.20. *Eggs* 1.50 × 1.04, pale grayish or greenish buffy, spotted with deep brown, etc. (hardly distinguishable from eggs of *T. maculata* or *T. alpina pacifica*). *Hab.* Eastern hemisphere in general; occasional in eastern North America and in Alaska..... 244. **T. ferruginea** Brünn. **Curlew Sandpiper.**

Genus EURYNORHYNCHUS Nilsson. (Page 149, pl. XLIV., fig. 3.)

Species.

Summer adult: Head, neck, and chest rusty, the crown streaked and the back spotted with dusky; scapulars and tertials lighter rusty, or ochraceous, the central portion of each feather black; wing-coverts brownish gray, with dusky shaft-streaks; lower parts from breast back, white, the sides more or less spotted with dusky. *Winter plumage:* Forehead, cheeks, and entire under parts white; upper parts (except forehead) dusky, the feathers margined with pale grayish. *Young:* Back and scapulars dusky, the feathers bordered terminally with dull whitish, these borders becoming rusty on anterior portion of back and scapulars; wing-coverts dusky centrally, with still darker shaft-streaks, and margined with brownish gray, the greater tipped with white; top of head dull grayish, spotted with dusky, the feathers edged with rusty; rest of head, neck (except behind), and lower parts white, clouded with light grayish brown, and suffused with dull buffy anteriorly. Length about 6.00, wing 3.35–3.90, culmen .80–1.00, width of bill near tip about .45, tarsus .80–.90. *Hab.* Eastern Siberia in summer, straggling across to coast of Alaska (Choris Peninsula); in winter, south to India.

245. **E. pygmæus** (Linn.). **Spoon-bill Sandpiper.**

GENUS **EREUNETES** ILLIGER. (Page 148, pl. XLVIII., fig. 3.)

Species.

COMMON CHARACTERS.—Rump slate-grayish; upper tail-coverts and middle tail-feathers dusky, rest of tail-feathers ash-gray; wing-coverts and tertials brownish gray, with darker shaft-streaks, the greater coverts tipped with white; superciliary region and lower parts white, the former finely streaked with dusky. *Summer adults* with feathers of back, scapulars, etc., blackish centrally, their edges more or less buffy or rusty; chest streaked or spotted with dusky. *Winter plumage* with upper parts plain grayish, the feathers with darker shaft-streaks; chest nearly or quite immaculate. *Young:* Much like summer adult, but chest tinged with dull buffy, and without streaks, and the scapulars and feathers of back margined terminally with white. *Downy young:* Forehead whitish, divided medially by a black line; crown chestnut, marbled posteriorly with black and white; occiput marbled whitish; a line of black on lores, forking just in front of eye, the upper branch running toward anterior corner of eye, the other inclining downward; upper parts fulvous-brown or rusty laterally, black centrally, the whole surface thickly bespangled with white downy tufts; throat fulvous-whitish; other lower parts dull whitish, nearly pure on belly. Length about 5.25–6.75.

a^1. Culmen .68–.75 (.72) in male, .80–.92 (.84) in female. *Summer adult* with little rusty on upper parts, the prevailing color above being grayish brown, tinged on sides of head (above ear-coverts), scapulars, etc., with pale buffy cinnamon, but this often nearly absent; chest narrowly streaked with dusky. *Young* with little of rusty or ochraceous on upper parts. *Male:* Wing 3.65–3.90 (3.69), culmen .68–.75 (.72), tarsus .80–.90 (.85), middle toe .55–.65 (.62). *Female:* Wing 3.85–4.00 (3.91), culmen .80–.92 (.84), tarsus .85–.95 (.90), middle toe .55–.65 (.61). *Eggs* 1.21 × 0.85, pale dull grayish buff, sprinkled, speckled, or spotted with dark brown and purplish gray. *Hab.* Northern and eastern North America, breeding from Labrador and western shores of Hudson's Bay to northern Alaska; west, during migrations, to Rocky Mountains.................. 246. **E. pusillus** (LINN.). **Semipalmated Sandpiper.**

a^2. Culmen .85–.95 (.88) in male, 1.00–1.15 (1.05) in female. *Summer adult* with upper parts chiefly rusty, or bright rusty cinnamon, the feathers spotted centrally with black, the rusty or cinnamon sometimes uniform along sides of head (above ear-coverts), and a more or less distinct stripe of same on side of head; chest and breast thickly marked with broad streaks (sometimes widened into triangular spots) of dusky, the sides marked with sagittate spots of the same. *Young:* Upper parts, including top of head, with rusty ochraceous prevailing. *Downy young:* Rusty areas of upper parts more extended and brighter in color. *Male:* Wing 3.60–3.75 (3.68), culmen .85–.95 (.88), tarsus .85–.90 (.87), middle toe .55–.60 (.59). *Female:* Wing 3.70–3.90 (3.82), culmen 1.00–1.15 (1.05), tarsus .90–.95 (.93), middle toe .60–.65 (.61). *Eggs* 1.24 × 0.87, deep cinnamon-buffy, sprinkled, speckled, or thickly spotted with bright rusty brown or chestnut, the general aspect decidedly rusty.[1] *Hab.* Western North America, breeding north to shores of Norton Sound, Alaska; during migrations occurring more or less plentifully along Atlantic coast........................ 247. **E. occidentalis** Lawr. **Western Sandpiper.**

Genus CALIDRIS Cuvier. (Page 149, pl. XLIV., fig. 4.)

Species.

Lower parts white, immaculate on belly, sides, flanks, under tail-coverts, axillars, and under wing-coverts; greater wing-coverts broadly tipped with white, and inner primaries white at base of outer webs. *Summer adult:* Above light rusty, spotted with blackish, many of the feathers tipped with whitish; head, neck, and chest pale rusty, streaked and speckled with dusky. *Winter plumage:* Above very pale uniform ash-gray, inclining to pearl-gray (the anterior lesser wing-coverts decidedly darker), varied only by slightly darker shaft-streaks to the feathers; throat and chest, like rest of lower parts, immaculate pure white. *Spring plumage:* Above light grayish, coarsely spotted with black (streaked on head and neck), and tinged here and there with rusty; chest speckled with dusky. *Young:* Above pale grayish, spotted with black and whitish, the latter on the tips of the feathers; chest immaculate white, faintly tinged with dull buff. Length 7.00–8.75, wing 4.70–5.00, culmen .95–1.00, tarsus .90–1.05, middle toe .55–.60. *Eggs* 1.41 × .91, light olive-brown, finely spotted or speckled with darker, the markings larger and more blended on larger end. *Hab.* Nearly cosmopolitan, but breeding only in northern portion of northern hemisphere................ 248. **C. arenaria** (Linn.). **Sanderling.**

Genus LIMOSA Brisson. (Page 149, pl. XLIX., fig. 1.)

Species.

*a*¹. Wings without any white patch.
  *b*¹. Tail distinctly barred.
    *c*¹. Upper tail-coverts pale cinnamon, barred with black; axillars and under wing-coverts cinnamon-rufous.
      Prevailing color pale cinnamon or ochraceous, the head and neck streaked, the remaining upper parts irregularly barred and spotted, with brownish dusky. *Adult:* Breast, sides, and flanks barred with dusky. *Young:* Breast, sides, and flanks immaculate, and deeper ochraceous than in adult. Length 16.50–20.50, wing 8.50–9.00, culmen 3.50–5.06, tarsus 2.75–3.00, middle toe about 1.40. *Eggs* 2.27 × 1.60, pale olive, varying to light grayish buffy, irregularly and rather sparsely spotted with dark brown and dull purplish gray. *Hab.* North America in

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[1] The eggs of the two species of this genus differ constantly and very decidedly in coloration, as shown by the above descriptions, which are based on a *very large series* of each.

general, breeding from Iowa, Dakota, etc., north to Alaska, migrating south in winter to Guatemala, Yucatan, and Cuba.

249. **L. fedoa** (LINN.). **Marbled Godwit.**

c^2. Upper tail-coverts white, spotted with dusky; axillars and under wing-coverts white, marked irregularly with dusky.

d^1. Rump white, marked with broad, acuminate streaks of dusky; head, neck, and lower parts very deep cinnamon in summer adult; length about 17.00, wing 8.25–8.50, culmen 2.95–3.80, tarsus 2.00–2.15, middle toe 1.10–1.20. *Hab.* Northern portion of eastern hemisphere.

L. lapponica (LINN.). **Bar-tailed Godwit.**[1]

d^2. Rump dusky, the feathers margined with white; head, neck, and lower parts paler cinnamon in summer adult. *Summer adult:* Head, neck, and lower parts, plain cinnamon-color; back and scapulars irregularly varied with blackish, whitish, and light rusty; wing-coverts light grayish, with dusky shaft-streaks and whitish margins. *Winter plumage:* Head, neck, and lower parts whitish, the head and neck streaked, the breast and sides scantily and irregularly barred, with grayish brown; back and scapulars plain brownish gray; otherwise, as in summer. *Young:* Above, including wing-coverts, light buffy grayish, or dull clay-color, irregularly varied with dusky; lower parts dull buffy whitish, shaded across chest with deeper grayish buff. Length 14.60–16.00, wing 8.25–9.15, culmen 3.15–4.70, tarsus 2.00–2.45, middle toe 1.10–1.33. *Eggs* 2.25 × 1.45, similar in color to those of *L. fedoa.* *Hab.* Coasts of eastern Asia and across to Alaska, migrating south in winter to New Zealand and Australia; Lower California (casual, in winter).

250. **L. lapponica baueri** (NAUM.). **Pacific Godwit.**

b^2. Tail not distinctly barred, but uniform black, with white base and tip.

Upper tail-coverts crossed by a broad band of pure white; longer upper tail-coverts, rump, and axillars plain sooty blackish, or dusky; under wing-coverts chiefly dusky. *Summer plumage:* Head and neck pale chestnut, streaked with dusky; lower parts deeper chestnut, barred with dusky; back, etc., blackish, irregularly varied with buffy. *Winter plumage:* Back, etc., plain dull brownish gray; head, neck, and lower parts dull whitish, or pale grayish buffy, shaded with brownish gray anteriorly. *Young:* Back, etc., dull brownish gray, each feather marked with a submarginal dusky crescent and margined terminally with buffy; beneath pale dull grayish buffy, the belly whitish and chest more grayish. Length 14.00–16.75, wing 8.10–8.60, culmen 2.85–3.45, tarsus 2.25–2.50, middle toe 1.15–1.30. *Eggs* 2.20 × 1.42, ovate, deep olive, hair-brown, or broccoli-brown (sometimes paler), usually more or less spotted with darker brown, but sometimes nearly uniform. *Hab.* Northern North America, east of Rocky Mountains (west to Pacific coast in Alaska), migrating south, in winter, through eastern United States, western Cuba, and Middle America to southern South America.

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[1] *Scolopax lapponica* LINN., S. N. ed. 10, i. 1758, 147. *Limosa lapponica* GRAY, Gen. B. iii. 1849, 570.

251. **L. hæmastica** (Linn.). **Hudsonian Godwit.**

*a*². Wing with two white patches, one at base of quills, the other occupying greater portion of secondaries.

Upper tail-coverts, rump, and tail, much as in *L. hæmastica;* axillars and under wing-coverts pure white. *Summer adult:* Head, neck, and chest cinnamon or rusty, the first two streaked, the last barred, with dusky; rest of lower parts white, the breast and sides barred with dusky; back, etc., mixed black, rusty, and whitish. *Winter plumage:* Head, neck, back, and scapulars plain dark brownish gray; chest plain pale grayish; rest of lower parts plain white. *Young:* "Head dull brownish, the feathers edged with rufous-buff . . . back earthy brown, with here and there a blackish brown feather, all being edged with dull rufous . . . sides of head, neck, and breast dark buff; flanks washed with buff." *Downy young:* "Rusty yellow, marked with black, especially on crown and rump; a narrow streak through the eye, wing-joints, cheeks, and belly, light yellowish." (Dresser.) Length about 15.00, wing 8.00–9.80, culmen 3.70–4.95, tarsus 2.80–3.80, middle toe 2.00–2.12. *Eggs* 2.17 × 1.50, deep grayish olive, indistinctly spotted with deeper olive-brown. *Hab.* Northern portion of eastern hemisphere; accidental in Greenland.

252. **L. limosa** (Linn.). **Black-tailed Godwit.**

Genus TOTANUS Bechstein. (Page 149, pl. L., figs. 1, 2.)

Species.

Common Characters.—Above grayish or brownish, more or less varied with white or dusky, or both; head and neck streaked, and tail barred, with white and grayish or dusky; lower parts white, the chest (sometimes other portions also) more or less streaked or spotted with dusky.

*a*¹. Bill longer than middle toe, with claw.

*b*¹. Tarsus more than one and a half times as long as the middle toe, without claw. (Subgenus *Totanus.*)

*c*¹. Nasal groove occupying less than half the total length of the upper mandible; exposed culmen as long as tarsus to base of hind toe· wing 7.00 or more.

*d*¹. Bill decidedly recurved; entire lower back and rump pure white; flanks and lower tail-coverts without markings. *Summer adult:* Back and scapulars blackish, the feathers edged with light ash-gray; fore-neck streaked with dusky. *Winter plumage:* Back and scapulars grayish, the feathers bordered with grayish white; fore-neck plain white. *Young:* Back, scapulars, etc., light brownish gray, the feathers margined with paler, and with a subedging of dusky, in the form of an irregular line inside the whitish border; these markings changed on tertials into short, zigzag, oblique bars along the edge of both webs; fore-neck, sides, etc., immaculate, as in winter adult. *Downy young:* "Upper parts black and gray, with reddish tinge; forehead, sides of head, and whole under-parts white; a streak through the eye, a fine line along the forehead, a larger spot on the crown, a few lines or spots over the arm, sides of rump, and tail-down black, often mixed with reddish brown." (MEVES, *fide* DRESSER.) Length 12.50–14.50, wing 7.00–7.80, culmen 2.15–2.20, tarsus 2.25–2.65, middle toe 1.12–1.30. *Eggs* 1.95 × 1.39, dull brownish buff, spotted with vandyke- and madder-brown and purplish gray. *Hab.* Greater part of eastern hemisphere, but only far northward during summer; accidental in eastern North America (Florida)?

253. **T. nebularius** (GUNN.). **Greenshank.**

d^2. Bill very slightly or not at all recurved; lower back and upper rump grayish, spotted with dusky; flanks and lower tail-coverts barred with dusky. *Summer adult:* Above varied with blackish-pale gray, and white, the first predominating, the last in the form of spots along the edges of the feathers; throat streaked with dusky; rest of lower parts (except belly) spotted or barred with the same. *Winter plumage:* Above rather light ash-gray, without the blackish, but with the white, spotting of summer dress; fore-neck, etc., much more narrowly streaked, and markings of other lower parts much sparser and less distinct. *Young:* Similar to winter adult, but darker and more brownish above, the whitish spotting tinged with light brownish buff. Length 12.15–15.00, wing 7.50–7.75, culmen 2.20–2.30, tarsus 2.50–2.75, middle toe 1.35–1.50. *Eggs* 1.43 × 1.20, brownish buffy, distinctly but very irregularly spotted with rich vandyke- or madder-brown. *Hab.* Nearly the whole of America, but breeding only in the more northern portions of the northern continent (south to northern Iowa and Illinois?).

254. **T. melanoleucus** (GMEL.). **Greater Yellow-legs.**

c^2. Nasal groove occupying more than half the total length of the upper mandible; exposed culmen much shorter than tarsus to base of hind toe; wing less than 7.00.

Plumage essentially similar, in all stages, to that of *T. melanoleucus;* legs also yellow in life; length 9.50–11.00, wing 6.10–6.65, culmen 1.30–1.55, tarsus 2.00–2.15, middle toe 1.00–1.15. *Eggs* 1.69 × 1.15, buffy (variable as to shade), distinctly (sometimes broadly) spotted or blotched with dark madder- or vandyke-brown, and purplish gray. *Hab.* Northern North America in summer; migrating southward (chiefly east of Rocky Mountains) to West Indies, Buenos Aires, Chili, etc.; accidental in Europe.................... 255. **T. flavipes** (GMEL.). **Yellow-legs.**

b^2. Tarsus much less than one and a half times as long as the middle toe, with claw. (Subgenus *Helodromas* KAUP.[1])

c^1. Upper tail-coverts dusky, barred with white; middle tail-feathers dusky, spotted along edges with white. *Summer adult:* Above olivaceous-slate, rather sparsely speckled with white; fore-neck distinctly streaked with dusky. *Winter plumage:* Above dark ashy, less distinctly speckled with white, the fore-neck less distinctly streaked. *Young:* Above grayish brown, thickly speckled with dull buff; sides of head and neck nearly uniform grayish. Length 7.50–8.60, wing 5.00–5.40, culmen 1.15–1.30, tarsus 1.25–1.90, middle toe 1.00. *Egg* (identification doubtful, but probably correct) 1.32 × .90, dull light buffy, thickly spotted and clouded with rich madder-brown and purplish gray. *Hab.* Temperate North America in summer, southern United States and tropical America in general in
(17.) winter............... 256. **T. solitarius** (WILS.). **Solitary Sandpiper.**

c^2. Upper tail-coverts pure white, nearly or quite immaculate; middle tail-feathers widely barred with white; otherwise, very similar in plumage, in all stages, to *T. solitarius*. *Downy young:* "Covered with close fine down; head grayish buff; a black line passes through each eye from the base of the bill to the nape; another broad line passes through the centre of the crown, and joins with one on each side of the crown at the nape, forming a patch, which is continued in a broad line to the rump; upper parts grayish buff and rufous, variegated with black, the latter forming to some extent a broad line on each side of the body; chin, throat, and under-parts white." (DRESSER.) Length about 10.00, wing 5.40–5.70, culmen 1.30–1.40, tarsus 1.25–1.40, middle toe .95–1.00. *Nest* not built by this species, but the abandoned nest of some tree-building bird, as a thrush, jay, or pigeon, often at a considerable height from the ground. *Eggs* 3–7, $1\frac{19}{40}$–$1\frac{24}{40}$ × $1\frac{4}{40}$–$1\frac{6}{40}$, pale "grayish sea-green, sparingly marked with . . . purplish gray . . . and dark brown." (DRESSER.) *Hab.* Northern portions of eastern hemisphere; accidental in eastern North America (Nova Scotia).

257. **T. ochropus** (LINN.). **Green Sandpiper.**

a^2. Bill much shorter than middle toe, with claw. (Subgenus *Rhyacophilus* KAUP.) Under wing-coverts white, the exterior ones spotted with dusky; wing 4.75–4.90, culmen 1.10–1.17, tarsus 1.40–1.46, middle toe 1.00–1.05. *Hab.* Eastern hemisphere; casual in Aleutian Islands.

—. **T. glareola** (LINN.). **Wood Sandpiper.**[2]

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[1] *Helodromas* KAUP, Naturl. Syst. 1829, 144. Type, *Tringa ochropus* LINN.

[2] *Tringa glareola* LINN., S. N. ed. 10, i. 1758, 149. *Totanus glareola* TEMM., Man. d'Orn. 1815, 421.

GENUS **SYMPHEMIA** RAFINESQUE. (Page 148, pl. L., fig. 3.)

Species.

Largest of the family (except species of the genera *Numenius* and *Limosa*), the wing measuring 8.00 or more; quills blackish, with nearly the basal half white, producing a very conspicuous patch on the spread wing. *Summer adult:* Above brownish gray, irregularly varied with dusky; lower parts white, tinged with grayish on fore-neck and buff along sides, the former, with chest, streaked or spotted with dusky, the latter barred with the same. *Winter plumage:* Above plain ash-gray; beneath immaculate white, the fore-neck shaded with grayish. *Young:* Above brownish gray, the feathers margined with buff or pale ochraceous; sides much tinged with the same, and finely mottled transversely with grayish. *Downy young:* Above dull grayish white or pale brownish gray, tinged here and there with pale brown, coarsely and irregularly marbled with dusky; fore-part and sides of forehead plain dull whitish; sides of head, with entire lower parts, dull white, the lores crossed, from eye nearly to bill, by a very distinct line of dusky; behind the eye two dusky lines, a shorter and broader one running from eye into the dusky mottling of occiput, a longer and narrower one commencing immediately beneath, and running back into dusky mottling on nape. Length about 15.00–17.00, wing 7.50–9.00, culmen 1.90–2.60, tarsus 1.95–2.85, middle toe 1.35–1.40. *Eggs* 2.13 × 1.53, pale buffy, varying from a brownish to a grayish olive shade, spotted with various shades of brown (usually rich madder-brown or vandyke), and purplish gray. *Hab.* Temperate North America; south, in winter, to West Indies, Brazil, etc.; accidental in Europe............ 258. **S. semipalmata** (GMEL.). **Willet. (18.)**

GENUS **HETERACTITIS** STEJNEGER. (Page 148, pl. XLV., fig. 3.)

Species.

COMMON CHARACTERS.—Upper parts uniform, or nearly uniform, grayish; lower parts white, more or less extensively barred with dusky in summer, washed with gray across chest and sides in winter, the young with gray of sides, etc., faintly mottled with whitish.

a^1. Nasal groove (measured from loral feathers) two-thirds as long as the exposed culmen; upper tail-coverts uniform gray, or with merely a narrow edging of whitish.

Summer adult: Above uniform plumbeous-gray; lower parts white, shaded across chest and along sides with plumbeous, the fore-neck streaked, and other parts (including belly and lower tail-coverts) barred, with dusky. *Winter plumage:* Similar, but without any bars on lower parts. *Young:* Similar to winter plumage, but scapulars, tertials, and upper tail-coverts indistinctly spotted along edges with white, and plumbeous of sides, etc., faintly mottled with the same. Length 10.50–11.30, wing 6.50–7.30, culmen 1.50–1.60, tarsus 1.25–1.35, middle toe 1.00–

1.05. *Hab.* Pacific coast of America, from the Galapagos and Lower California to Aleutian Islands and Norton Sound, Alaska, and Commander Islands, Kamtschatka; also, the more eastern Pacific islands (Pomotu group, Marquesas, Tahiti, Tongatabu, Palmyra, Samoa, Upolu, Fiji, etc.)...................... 259. **H. incanus** (Gmel.). **Wandering Tatler.**

a^2. Nasal groove (measured from frontal feathers) only about one-half as long as the exposed culmen; upper tail-coverts distinctly barred with white.

Summer adult: Belly and under tail-coverts immaculate white, the dark bars of other lower parts narrower than in *H. incanus;* otherwise similar to that species, but gray of a browner shade; size smaller. *Hab.* Shores and islands of the western Pacific, from Australia, Borneo, etc., to Kamtschatka (mainland).

H. brevipes (Vieill.). **Polynesian Tatler.**[1]

Genus PAVONCELLA Leach. (Page 148, pl. XLIX., fig. 3.)

Species.

Above varied with black, buff, and gray, the scapulars and tertials obliquely barred; beneath white, varied on chest and throat; inner webs of primaries finely mottled toward base; three outermost tail-feathers plain, the rest barred; sides of rump white. *Adult male:* Colors varying with the individual, scarcely two being alike; the "cape" usually glossy black, ochraceous, or whitish, the "ruff" usually chestnut, glossy black, buff, whitish, or ochraceous, these colors either plain, streaked, or barred, according to the individual. *Adult female:* No "ruff" or "cape," and head completely feathered; plumage barred with blackish, buff, white, and rusty, the belly and lower tail-coverts usually immaculate white. *Young:* Back and scapulars brownish black, the feathers bordered with buff or ochraceous; top of head ochraceous streaked with black; lower parts plain buffy anteriorly, whitish posteriorly. Length 10.00–12.50, wing 6.40, tail 2.60, culmen 1.25, tarsus 1.75, middle toe, with claw, 1.40. *Eggs* 1.71 × 1.20, light olive or olive-buff, spotted with vandyke-brown or bistre. *Hab.* More northern portions of eastern hemisphere; occasional in eastern United States (Maine, Massachusetts, Long Island, Ohio, etc.)... 260. **P. pugnax** (Linn.). **Ruff.**

Genus BARTRAMIA Lesson. (Page 148, pl. LI., fig. 1.)

Species.

Adult: Above light brownish, the feathers more ochraceous toward edges, spotted and barred with blackish; crown blackish, divided by a median line of buff; rest of head and neck ochraceous or buffy, streaked with dusky, except chin and throat, which are plain whitish; tail-feathers (except middle pair) light buff, broadly tipped with white, marked near ends with a broad black spot, and, anterior to this, with a few irregular narrow dusky bars. Inner web of outer quill marked with broad bars of white, on other quills broken up into a confused mottling; axillars white regularly barred with clear slate-color; belly and lower tail-coverts plain dull whitish or very pale buff (buff and ochraceous tints much deeper in winter). *Young:* Similar to adult, but buffy tints deeper, dusky streaks on fore-neck and chest much less distinct, and the back plain dusky, with distinct buff margins to the feathers. *Downy young:* Above coarsely and irregularly mottled with blackish on a grayish white ground tinged with light rusty; lower parts buffy white, with several blackish spots on flanks, one beneath eye, a smaller one on lores, and a larger, nearly perpendicular one behind ears. Length 11.00–12.75, wing 6.50–7.00, culmen 1.10–1.15, tarsus 1.90–2.05, middle toe .90–1.05. *Eggs* 1.79 × 1.30, ovate or short-ovate, creamy buff or dull buffy white, speckled and spotted, chiefly round larger end, with dark brown and purplish gray. *Hab.* Eastern and central North America in general, west to edge of the Great Basin, north to the Yukon Valley and Nova Scotia; south, in winter, to Brazil and Peru; occasional in Europe, and accidental in Australia...... 261. **B. longicauda** (Bechst.). **Bartramian Sandpiper.**

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[1] *Totanus brevipes* Vieill., Nouv. Dict. N. H. vi. 1817, 410. *Heteractitis brevipes* Stejn., Orn. Expl. Kamt. 1885, 137.

GENUS **TRYNGITES** CABANIS. (Page 148, pl. LII., fig. 2.)

Species.

Upper parts dull grayish buff or brownish, varied with blackish; lower parts buff, streaked or speckled on chest with dusky; axillars white; under primary coverts and inner webs of quills beautifully mottled or speckled with dusky on a whitish ground. *Adult:* Feathers of back, etc., blackish centrally, and without whitish borders. *Young:* Feathers of back, etc., distinctly bordered with whitish, the black and brown less sharply contrasted; mottling on inner webs of quills, and under primary coverts, much more minute and delicate than in adult. Length 7.00–8.90, wing 5.10–5.50, culmen .75–.80, tarsus 1.15–1.30, middle toe .75–.85. *Eggs* 1.53 × 1.04, buffy grayish white, varying to pale olive-buff, boldly spotted, longitudinally (and somewhat spirally) with dark vandyke- or madder-brown and purplish gray. *Hab.* North America in general, especially the interior, breeding far northward; south, in winter, to Uruguay and Peru; occasional in Europe.
262. **T. subruficollis** (Vieill.). **Buff-breasted Sandpiper.**

GENUS **ACTITIS** BOIE. (Page 148, pl. LII., fig. 1.)

Species.

Common Characters.—Above plain grayish brown, with a faint greenish or bronzy lustre, in summer adults or young slightly relieved by more or less of dusky streaking or barring, or both; outer tail-feathers barred with white, the rest (except middle pair) tipped with the same; secondaries broadly tipped with white, and with more than their basal half (abruptly) white; inner webs of second to tenth quills (inclusive) with a longitudinal white patch, increasing in depth toward the tenth, on which it touches the shaft; superciliary stripe (sometimes not very distinct) and lower parts chiefly pure white.

*a*¹. *Summer adult* with lower parts marked everywhere with roundish spots of blackish. *Winter adult:* Above plain grayish olive, with a faint bronze gloss, with no markings except dusky shaft-streaks, except on wing-coverts, which are more or less barred with dusky; lower parts immaculate white, faintly shaded across chest with brownish gray, most distinct laterally. *Young:* Similar to winter plumage, but wing-coverts, scapulars, and upper tail-coverts more or less barred with pale dull buff and dusky. *Downy young:* Above yellowish gray, with a narrow black stripe down back, continued anteriorly to the bill; a narrow black line on each side of head, through eye; lower parts dull white. Length about 7.00–8.00, wing 4.05–4.60, culmen .90–1.05, tarsus .90–1.05. *Eggs* 2–5, 1.25 × .90, short-ovate, buffy, more or less thickly speckled and spotted with dark brown and black. *Hab.* Whole of North America; south, in winter, through West Indies, Middle America, and northern South America to Brazil · accidental or occasional in Europe.

263. **A. macularia** (Linn.). **Spotted Sandpiper.**

*a*². Summer adult with lower parts plain white, except chest, which is pale brownish gray, streaked with darker.

Other plumages very similar to corresponding stages of *A. macularia;* length about 6.50–7.50, wing 3.80–4.40, culmen 1.00–1.05, tarsus .95–1.05. *Hab.* Northern portions of eastern hemisphere, east to Commander Islands, Kamtschatka.

A. hypoleucos (Linn.). **Common Sandpiper (of Europe).**[1]

Genus NUMENIUS Brisson. (Page 149, pl. XLIX., fig. 2.)

Species.

*a*¹. Feathers of thighs without lengthened bristly points.

*b*¹. Rump not white.

*c*¹. Secondaries and quills rusty cinnamon, the outer webs of latter dusky; axillars deep cinnamon, without distinct bars; lower parts pale cinnamon.

Above pale cinnamon, tinged here and there with grayish, varied, transversely, with blackish, the top of head narrowly streaked with dusky, but without median light stripe; secondaries and quills cinnamon-rufous, the outer webs of the latter dusky. *Downy young:* Buffy yellow, deeper above, tinged with sulphur-yellow beneath; upper parts coarsely and irregularly marbled with black; *bill straight,* about 1.40 long. Length about 20.00–26.00, wing 10.00–11.00, culmen 2.30 (young of year)–8.50, tarsus 3.00–3.50. *Eggs* 2–4, 2.59 × 1.81, light grayish buff or pale buffy brown, spotted, blotched, or speckled with umber-brown. *Hab.* Whole of temperate North America, migrating south to Guatemala, Cuba, and Jamaica.

264. **N. longirostris** Wils. **Long-billed Curlew.**

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[1] *Tringa hypoleucos* Linn., S. N. ed. 10, i. 1758, 149. *Actitis hypoleucos* Boie, Isis, 1822, 560.

c^2. Secondaries and quills mainly or entirely dusky brownish; axillars pale dull cinnamon or buffy, distinctly barred with dusky; lower parts pale dull buffy.

d^1. Crown with two broad lateral stripes of brownish dusky, enclosing a narrower median stripe of buffy; breast, etc., narrowly streaked with dusky; inner webs of quills spotted with buff toward edges; length 16.50–18.00, wing 9.00–10.25, culmen 3.00–4.00, tarsus 2.25–2.30, middle toe 1.35–1.40. *Eggs* 2.27 × 1.57, pale olive, spotted with dull brown. *Hab.* Whole of North America; south, in winter, through West Indies, Middle America, and greater part of South America; breeding far northward.... 265. **N. hudsonicus** LATH. **Hudsonian Curlew.**

d^2. Crown narrowly streaked with dusky, and without lighter median stripe; breast, etc., with V-shaped marks of dusky; inner webs of quills entirely dusky; length 12.60–14.50, wing 8.00–8.50, culmen 2.25–2.50, tarsus 1.70–1.80, middle toe 1.00. *Eggs* 2.04 × 1.43, pale olive-greenish, olive, or olive-brownish, distinctly spotted, chiefly on larger end, with deep or dark brown. *Hab.* Northern and eastern North America, breeding far northward; migrating south, in winter, through Middle America to southern extremity of South America.

266. **N. borealis** (FORST.). **Eskimo Curlew.**

b^2. Rump plain white.

Similar to *N. hudsonicus*, but plumage in general rather grayer, the rump white, and the axillars white, barred with grayish brown; length about 17.00, wing 9.30–10.50, culmen 3.00–3.60, tarsus 2.30–2.50, middle toe 1.40. *Eggs* 2.39 × 1.66, light olive-brownish or buffy olive, spotted with bistre and vandyke-brown. *Hab.* Northern portions of eastern hemisphere; occasional in Greenland.

(19.) 267. **N. phæopus** (LINN.). **Whimbrel.**

a^2. Feathers of thighs terminated by long, bristle-like points.

Upper tail-coverts and tail ochraceous, the latter crossed by regular narrow bands of dusky brown; top of head plain dark brown, divided medially by a stripe of buff; axillars pale cinnamon or pinkish buff, widely barred with dark brown; upper parts in general sooty brownish, coarsely and irregularly varied with buffy; lower parts dull buffy, the cheeks, neck, and chest streaked with brown, the sides irregularly barred with the same; length about 17.25, wing 9.50–10.40, culmen 2.70–3.70, tarsus 2.00–2.40, middle toe 1.35–1.50. *Hab.* Islands of Pacific Ocean and coast of Alaska.......... 268. **N. tahitiensis** (GMEL.). **Bristle-thighed Curlew.**

FAMILY **CHARADRIIDÆ.**—THE PLOVERS. (Page 143.)

Genera.

(*Nest* on ground in meadow or near water, the nest itself often a mere depression in ground. *Eggs* 2–4, more or less pyriform-ovate, light olive or buffy, more or less spotted or speckled with brown or blackish.)

a^1. Wing more than 8.00; plumage of upper parts partly metallic; head crested. **Vanellus.** (Page 172.)

a^2. Wing less than 8.00; plumage without metallic tints; head not crested.

  b^1. Plumage of upper parts much speckled or spotted; lower parts uniform black medially in summer dress.................. **Charadrius.** (Page 172.)

  b^2. Plumage of upper parts plain; lower parts always white medially. **Ægialitis.** (Page 174.)

GENUS **VANELLUS** BRISSON. (Page 172, pl. LV., fig. 1.)

Species.

Summer adult: Fore-part and top of head, chin, throat, and breast, uniform blue-black; side of head and neck white, becoming grayish on hind-neck; upper parts chiefly metallic bottle-green, bluish and coppery purple, the first predominating; upper tail-coverts rufous; basal half and tip of tail white, the rest dull black; belly, etc., white, becoming pale rufous on lower tail-coverts. *Winter plumage:* Similar to summer plumage, but anterior part of lores, together with chin and throat, white, the white of side of neck, etc., tinged with buff. *Downy young:* Top and sides of head and entire upper parts dull light brownish gray, mottled with black, the shoulders tinged with light rusty and the rump with large spots of deep black; hind-neck, chin, throat, and entire lower parts except chest, white, the first tinged with light ashy; chest dusky grayish. Length about 13.00, wing 8.50–9.00, culmen 1.00, tarsus 2.00, middle toe 1.00–1.10. *Eggs* 1.85 × 1.33, varying from dull light grayish buff to deep olive-buff, spotted with brownish black. *Hab.* Northern portions of eastern hemisphere; occasional in Greenland; accidental in Alaska and on Long Island?.. 269. **V. vanellus** (LINN.). **Lapwing.**

GENUS **CHARADRIUS** LINNÆUS. (Page 172, pl. LIV., figs. 1, 2.)

Species.

COMMON CHARACTERS.—*Summer adults* with most of lower parts and sides of head (up to and including lores and ear-coverts) uniform black; forehead, sides of crown, and sides of neck and chest, adjoining the black, plain white; upper parts speckled or spotted with blackish and whitish or yellowish. *Winter adults* without any black on lower parts, which are whitish, the chest, sides of neck and head, etc., streaked with brownish gray; the upper parts spotted with grayish and dusky (sometimes mixed with yellowish). *Young* similar to winter adult, but above speckled with yellowish.

*a*¹. A very small rudimentary hind toe; axillars sooty blackish. (Subgenus *Squatarola* CUVIER.)

Summer adult: Lower parts, except sides of chest, thighs, anal region, and lower tail-coverts (which are white), and sides of head up to and including lores and ear-coverts, uniform black; upper parts irregularly spotted with dusky and whitish, except on forehead and thence back to sides of breast, which are immaculate white. *Winter adult:* Black of lower parts replaced by plain white, the fore-neck and chest, however, streaked and somewhat spotted with dusky; upper parts with white spotting replaced by grayish. *Young:* Similar to winter adult, but upper parts speckled with pale yellowish. *Downy young:* Above olive-yellowish, marbled with blackish, the hind-neck white; a blackish line along sides of crown, another from bill to eye (across lores), and a less distinct, somewhat curved, streak beneath eye; lower parts white. Length 10.50–12.00, wing 7.50, culmen 1.10, tarsus 1.95, middle toe 1.15. *Eggs* 2.04 × 1.43, light buffy olive, spotted and speckled with dark brown and brownish black, or deep black. *Hab.* Northern portions of northern hemisphere, breeding far northward; nearly cosmopolitan during migrations.................... 270. **C. squatarola** (LINN.). **Black-bellied Plover.**

*a*². No hind toe; axillars grayish or white. (Subgenus *Charadrius.*)

*b*¹. Axillars and under wing-coverts white.

Summer adult: Above dusky, speckled with bright ochre-yellow; sides of head (up to and including lores and auriculars), chin, throat, and lower parts, uniform dull black, or dusky, that of the head and neck bordered behind by a broad pure white stripe, extending from forehead to sides of chest. *Winter adult:* No black on lower parts, which are white on throat and belly, elsewhere light brownish gray, streaked on chest, etc., with darker; upper parts less marked with yellow than in summer (?). *Young:* Similar to winter adult, but upper parts strongly marked and conspicuously speckled with yellowish, the chest, etc., strongly suffused with the same. *Downy young:* Bright "golden," varied with black on the head and back, the hind-part of the head bright yellow; a spot under the eye and under surface of the body pure white. Length about 10.50, wing 6.80–7.20, culmen .85–.90, tarsus 1.50–1.65, middle toe .95–1.00. *Eggs* 2.07 × 1.40, dull light grayish buff, olive-buff, or brownish buff, spotted with brownish black. *Hab.* Northern Europe in summer, south into Africa in winter; breeding also in eastern Greenland.

271. **C. apricarius** LINN. **Golden Plover.**

*b*². Axillars and under wing-coverts smoky gray. (Otherwise, in all stages, much like *C. apricarius.*)

*c*¹. With longer wings, relatively shorter tarsi and toes, and less golden coloration, especially in immature and winter plumages; length 9.50–10.80, wing 6.80–7.40 (7.09), culmen .80–1.00 (.92), tarsus 1.55–1.82 (1.70), middle toe .80–1.05 (.90). *Eggs* 1.90 × 1.30, pale buffy brown, light dull buffy, pale grayish buff, or olive-buff, spotted, chiefly round larger end, with black, the larger of these spots often confluent. *Hab.* Breeding in Arctic America, east of coast of Bering's Sea and Straits, migrating south, in winter, throughout nearly the whole of America (except Pacific coast?), as far as Patagonia... 272. **C. dominicus** Müll. **American Golden Plover.**

*c*². With shorter wings, relatively longer tarsi and toes, and decidedly more golden coloration, especially in immature and winter plumages; length 7.80–10.00, wing 6.10–6.80 (6.40), culmen .85–1.00 (.92), tarsus 1.55–1.85 (1.72), middle toe .85–.95 (.90). *Eggs* 2.02 × 1.30, similar in coloration to those of *C. dominicus. Hab.* Breeding in northern Asia, and Alaskan coasts of Bering's Sea and Straits; in winter, south through India, China, etc., to Australia and Polynesia. 272*a*. **C. dominicus fulvus** (Gmel.). **Pacific Golden Plover.**

GENUS **ÆGIALITIS** BOIE. (Page 172, pl. LII., figs. 3–5; pl. LIII., figs. 1–3.)

Species.

*a*¹. Tail at least half as long as the wing, extending half its length, or more, beyond tips of closed wings; graduated for more than length of inner toe, without claw; rump and upper tail-coverts ochraceous; chest crossed by two black bands. (Subgenus *Oxyechus* Reichenbach.)

Adult: Upper parts generally, except rump and upper tail-coverts, grayish brown; forehead, stripe over ear-coverts, chin, throat, collar round hind-neck, and lower parts, white; fore-part of crown, stripe across lores, collar completely encircling lower part of neck, and broad band across breast, black; tail chiefly pale ochraceous, varied with white, dusky, and grayish; bill black; eyelids bright orange-red in life. *Young:* Similar to adult, but feathers of upper parts more or less distinctly margined with pale rusty or ochraceous. *Downy young:* Top of head and upper parts generally grayish brown, the two areas encircled with black, and separated by a white collar across nape; lower parts white, interrupted by a black collar completely encircling the lower neck, and forming a broad band across chest; a narrow line of black across lores; sides and flanks light brownish buff; a broad bar of black along humeral region, and a narrow stripe of same along middle of rump; hand-wing, and hinder edge of arm-wing, white. Length 10.00–11.25, wing 6.20–6.75, tail 3.60–4.10, culmen .70–.90, tarsus 1.40–1.55. *Eggs* 1.47 × 1.04, pale dull buffy, thickly speckled and irregularly spotted with black. *Hab.* Whole of temperate North America, migrating in winter to West Indies, Middle America, and northern South America; Bermudas.
273. **A. vocifera** (Linn.). **Killdeer.**

*a*². Tail less than half as long as wing, reaching but little if any beyond tips of the latter when folded; even, or graduated for much less than length of middle toe, without claw; rump concolor with the back; chest crossed by only one band (black, grayish, or rufous), or none at all.

*b*¹. Culmen equal to middle toe, with claw. (Subgenus *Ochthodromus* REICHENBACH.)

Adult male: Forehead, superciliary stripe, and lower parts white; upper parts brownish gray; fore-part of crown, streak across lores (sometimes wanting), and band across chest, black. *Adult female:* Similar to the male, but black replaced by brownish gray, usually more or less tinged with ochraceous or light rusty. *Young:* Similar to adult female, but feathers of upper parts margined terminally with paler. *Downy young:* Crown and occiput light grayish buff, irregularly marbled with black; back and rump similar but more grayish, the mottling coarser and less distinct; arm-wing light buff, mottled with dusky; hand-wing entirely pure white; forehead, superciliary region, sides of head, collar round hind-neck, and lower parts white; a post-ocular black streak. Length about 7.50–7.90, wing 4.50, culmen .80, tarsus 1.25, middle toe .75.

*c*¹. Nape and sides of occiput only slightly tinged with ochraceous. *Female* with lores chiefly or entirely white, and band across chest usually grayish, tinged more or less with ochraceous. *Eggs* 1.38 × 1.02, dull light buffy, very irregularly speckled and zigzagged with black or dark brown and purplish gray. *Hab.* Atlantic and Gulf coasts, north to Long Island (casually to Nova Scotia); both coasts of Mexico, north to Cape St. Lucas in winter.

280. **A. wilsonia** (ORD). **Wilson's Plover.**

*c*². Nape and sides of occiput very deeply suffused with ochraceous or rusty. *Female* with lores chiefly or wholly brownish gray, and band across chest usually ochraceous or light rusty. *Hab.* West Indies and northern Atlantic coast of South America, to Bahia.

A. wilsonia rufinucha RIDGW. **Rufous-naped Plover.**[1]

*b*². Culmen much shorter than middle toe, with claw.

*c*¹. Tarsus twice as long as bill, measured from anterior point of loral feathering; no band across chest. (Subgenus *Podasocys* COUES.)

Summer adult (*sexes alike*): Upper parts light grayish brown, sometimes tinged with buff or ochraceous; lower parts dull white, more or less shaded with pale buffy grayish across chest (more or less suffused with buff or ochraceous in spring); forehead and superciliary stripe purer white; fore-part of crown, and streak across lores, black. *Winter plumage:* Similar to summer dress, but black markings of head wanting, and plumage more strongly tinged with buff. *Young:* Similar to winter plumage, but whole side of head and neck, and chest, deep creamy buff, and all the feathers of upper parts distinctly bordered with light buff. *Downy young:* Above brownish buff, mottled with black, this forming a distinct marbling on crown and occiput, where the ground-color is lighter and clearer buff; lower parts immaculate pale buff. Length 8.00–9.10, wing 6.00, culmen .80–.90, tarsus 1.50–1.60, middle toe .70. *Eggs* 1.47 × 1.11, varying from light olive to deep cream-color, rather sparsely and irregularly speckled and lined with dark brown, black, and purplish gray. *Hab.* Western North America, east to the Great Plains; accidental in Florida.

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[1] *Ægialitis wilsonius* var. *rufinuchus* RIDGW., Am. Nat. viii. Feb. 1874, 109. ? *Charadrius crassirostris* SPIX, Av. Bras. ii. 1825, 77, pl. 94. (*Cf.* PELZ., Orn. Bras. 1870, 297.)

281. **Æ. montana** (Towns.). **Mountain Plover.**

c^2. Tarsus less than twice as long as bill, measured from anterior point of loral feathering; chest with a black, grayish, or rusty band, sometimes interrupted in the middle portion. (Subgenus *Ægialitis* Boie.)

d^1. Nape crossed by a more or less distinct white collar.

e^1. Bill decidedly shorter than middle toe, very stout (except in *Æ. dubia*), its basal half light-colored (orange or yellow in life), except in *Æ. dubia.*

f^1. A distinct web between base of inner and middle toes.

Above grayish brown; forehead, ring round hind-neck, and lower parts white. *Summer adult:* Lores, fore-part of crown, and broad band across chest black (usually duller in female). *Winter plumage:* Similar to summer dress, but black markings replaced by grayish brown. *Young:* Similar to winter plumage, but feathers of upper parts margined terminally with light buff. *Downy young:* Above pale grayish brown, mottled with black; frontal crescent, collar round hind-neck, and entire lower parts white. Length 6.50–7.50, wing 4.65–5.00, culmen .48–.55, tarsus .95–1.05. *Eggs* 1.26 × .94, pale dull buffy or olive-buff, speckled or irregularly spotted, chiefly on or around larger end, with dark brown or black. *Hab.* Whole of North America, breeding far northward; south, in winter, throughout West Indies, Middle America, and northern South America, to Brazil, Peru, and Galapagos... 274. **Æ. semipalmata** Bonap. **Semipalmated Plover.**

f^2. No web between base of inner and middle toes.

g^1. Upper parts deep grayish brown, as in *Æ. semipalmata.*

h^1. Bill stout, the basal half light-colored (yellow or orange in life); no whitish bar behind black patch on fore-part of crown. (Plumage very similar, at all stages, to that of *Æ. semipal-*

mata, but adult with black or grayish brown band across chest much broader.) *Downy young:* "Forehead white; crown grayish brown, mottled with light stone-gray; from the base of the bill around the nape a black band passes, and is broadest on the nape; a broad collar round the neck and the underparts pure white; back and upper parts generally grayish stone-brown, finely mottled with dirty white and blackish brown." (DRESSER.) Length about 7.50, wing about 5.00, culmen .50–.55, tarsus 1.00, middle toe .60–.65. *Eggs* 1.40 × 1.00, similar in coloration to those of *Æ. semipalmata*. *Hab.* Northern portions of eastern hemisphere, and eastern portions of Arctic America.

275. **Æ. hiaticula** (LINN.). **Ring Plover.**

*h*². Bill slender, entirely black; a whitish bar immediately behind black patch on fore-part of crown. (Otherwise much like *Æ. hiaticula*, but much smaller.) Length about 6.00, wing 4.35–4.70, culmen .50–.52, tarsus 1.00–1.05, middle toe .55–.60. *Hab.* Northern portions of eastern hemisphere, including western Africa; accidental in California (?) and Alaska (?)............... 276. **Æ. dubia** (SCOP.). **Little Ring Plover.**

*g*². Upper parts pale brownish gray.

Summer adult: Forehead, lores, collar round hind-neck, and lower parts pure white; patch on fore-part of crown, and one across each side of chest (the two sometimes connected on middle of chest), black (duller or more grayish in female). *Winter plumage:* Similar to summer adult, but black or dusky replaced by light brownish gray. *Young:* Similar to winter plumage, but feathers of upper parts distinctly bordered terminally with pale buff or whitish. Length 6.25–7.50, wing 4.50–4.80, culmen .45–.50, depth of bill at base .20–.22, tarsus .85–1.00, middle toe .55.

*h*¹. Black patches on sides of chest wholly separated or very imperfectly connected. *Eggs* 1.27 × .96, pale buffy rather sparingly speckled with black and purplish gray.

Hab. Chiefly the Atlantic coast of the United States, north to southern Labrador; West Indies in winter.

277. **Æ. meloda** (Ord). **Piping Plover.**

*h*². Black patches on sides of chest more or less completely coalesced. *Eggs* 1.27 × .93, colored as in *Æ. meloda.* *Hab.* Mississippi Valley, and north to Lake Winnipeg.

277*a*. **Æ. meloda circumcincta** Ridgw. **Belted Piping Plover.**

*e*². Bill much longer than middle toe (without claw), very slender, wholly black.

Summer adult: Above light brownish gray, the crown and occiput often varying to light buff; forehead, superciliary region, lores, and lower parts pure white; patch on fore-part of crown, ear-coverts, and transverse patch on each side of chest black, usually much duller, or dusky grayish, in female. *Winter plumage:* Similar to summer dress, but black markings replaced by brownish gray. *Young:* Similar to winter plumage, but feathers of upper parts distinctly bordered terminally with whitish. *Downy young:* Above pale grayish buff, interrupted by a white collar across hind-neck, the whole colored portion mottled with black; forehead, hand-wing, and lower parts white; a dusky streak behind eye. Length 6.25–7.00, wing 4.20–4.30, culmen about .60, tarsus .90–1.05, middle toe .55–.60. *Eggs* 1.21 × .87, pale dull buffy, speckled with dark brown and black. *Hab.* Western North America, south to Mexico, and, in winter, to Chili; western Cuba?

278. **Æ. nivosa** Cass. **Snowy Plover.**

*d*². Hind-neck without trace of white or dusky collar.

*e*¹. Bill very slender, the culmen equal to or longer than middle toe (without claw).

Above grayish brown, the feathers with paler margins, more or less tinged with rufous, especially on crown, ear-coverts, and sides of neck; forehead, cheeks, and lower parts pure white, interrupted by a black band across chest; anterior half of crown and a distinct loral stripe black. *Young:* Black of crown and lores absent or barely indicated, and black chest-band narrower or even interrupted in middle portion. Wing 3.70–4.15, culmen .60, depth of bill through base .15–.17, tarsus 1.00–1.10, middle toe .50–.55. *Hab.*

Tropical America in general (except West Indies) north to southern Mexico.

Æ. collaris (VIEILL.). **Azara's Ring Plover.**[1]

*e*³. Bill stout, the culmen decidedly shorter than middle toe (without claw).

Summer adult: Above grayish brown, beneath white; hind-neck and broad band across chest clear cinnamon-rufous; lores, orbital region, and ear-coverts black, the former bordered above by a white line, sometimes meeting on forehead. (*Female* usually with rufous paler and less abruptly defined than in the male, and black markings of head less distinct.) *Winter plumage:* Somewhat similar to summer dress, but rufous entirely absent, the chest crossed by an indistinct grayish brown narrow band, becoming broader and deeper in color laterally; black of ear-coverts, loral streak, etc., replaced by dull grayish brown; forehead white. *Young:* Much like winter dress, but plumage more or less suffused with buff, and feathers of upper parts distinctly bordered with buff or dull ochraceous. Length 6.25–7.00, wing about 5.15–5.40, culmen .62, tarsus 1.15, middle toe .73. *Eggs* 1.43 × 1.05, pale dull olive, varying to buffy olive, rather sparsely and irregularly speckled with dark brown and black. *Hab.* Northern Asia, south in winter to Malay Archipelago, Philippines, Australia, etc.; accidental on Choris Peninsula, Alaska.

279. **Æ. mongola** (PALL.). **Mongolian Plover.**

FAMILY APHRIZIDÆ.—THE SURF BIRDS AND TURNSTONES.

(Page 143.)

Genera.

*a*¹. Nasal groove more than half the length of the maxilla; tail emarginate; terminal portion of bill somewhat swollen, with the upper outline decidedly convex (as in the Plovers, *Charadriidæ*).................. **Aphriza.** (Page 180.)

*a*². Nasal groove not more than half the length of the maxilla; tail slightly rounded; terminal half of bill compressed and pointed, with the upper outline straight, or sometimes even slightly concave........................ **Arenaria.** (Page 180.)

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[1] *Charadrius collaris* VIEILL., Enc. Méth. ii. 1823, 334. *Ægialitis collaris* SCL. & SALV. P. Z. S. 1869, 252.

GENUS **APHRIZA** AUDUBON. (Page 179, pl. LV., fig. 2.)

Species.

Summer adult: Head, neck, back, and scapulars spotted and streaked with dusky and whitish, the scapulars with a few large, irregular spots of rufous; upper tail-coverts, basal half of tail, a broad band across ends of greater wing-coverts, tip of tail, and lower parts from breast backward, white, the sides and under tail-coverts spotted with dusky. *Winter adult:* Head, neck, breast, and most of upper parts plain dusky, or brownish slate; white areas as in summer. *Young:* Upper parts (except upper tail-coverts, etc.) brownish gray, the feathers narrowly bordered with whitish; throat, fore-neck, and breast white, streaked with dusky grayish; lower parts and upper tail-coverts white. Length about 10.00, wing 7.00, culmen .95–1.00, tarsus 1.20–1.25, middle toe .90–.95. *Hab.* Pacific coast of America, from Alaska to Chili; Sandwich Islands?

282. **A. virgata** (GMEL.). **Surf Bird.**

GENUS **ARENARIA** BRISSON. (Page 179, pl. LV., fig. 3.)

(*Nest* on or near sea-beach, consisting of little more than a mere depression in sand, gravel, or shingle. *Eggs* 2–4, more or less pyriform-ovate, light olive, speckled with brownish.)

Species.

COMMON CHARACTERS.—Lower parts (except chest), upper part of rump, upper tail-coverts, and greater wing-coverts, white; rest of plumage chiefly dusky, the upper parts sometimes varied with white and rufous.

a^1. Throat white. *Adult:* Upper parts varied, more or less, with rufous; head mostly white; chest uniform deep black. *Young:* Upper parts without rufous, but the feathers with ochraceous or buffy margins; head mostly dusky; chest mottled dusky. *Downy young* (about three days old, *fide Collett*): "Blackish gray, slightly washed with yellowish, and here and there tipped with black; along the crown is a narrow black band reaching to the forehead, though not quite to the base of the bill; a similar stripe extends from the base of the upper mandible to the eye; and there is a black spot at the gape; sides of the throat gray; belly white; wing and scapulars colored like the back." (DRESSER.) Length 9.00–9.90, wing 6.00, culmen .80–.90, tarsus 1.00. *Eggs* 1.58 × 1.13, light grayish olive, thickly sprinkled and speckled with vandyke-brown. *Hab.* Entirely cosmopolitan, but chiefly along sea-coasts........................ 283. **A. interpres** (LINN.). **Turnstone.**

a^2. Throat dusky. *Summer adult:* Upper parts uniform bronzy brownish black; head, neck, and chest similar, with white streaks on forehead and chest, and a large white spot on lores. *Winter plumage:* Similar to summer adult, but head, neck, and chest uniform brownish dusky. *Young:* Similar to winter plumage, but head, etc., more grayish, and feathers of upper parts margined terminally with pale buffy or whitish. Length about 9.00, wing 5.80–6.10, culmen .85–1.00, tarsus 1.00–1.10. *Eggs* 1.62 × 1.12, similar in coloration to those of *A. interpres*. *Hab.* Pacific coast of North America, north to Aleutian Islands, south to Monterey, California; accidental in India.

284. **A. melanocephala** (VIG.). **Black Turnstone.**

FAMILY **HÆMATOPODIDÆ.**—THE OYSTER-CATCHERS. (Page 143.)

Genera.

(Characters same as those given for the Family).. **Hæmatopus.** (Page 181.)

GENUS **HÆMATOPUS** LINNÆUS. (Page 181, pl. LI., fig. 2.)

(*Nest* on or near sea-beach, consisting of a mere depression in sand, gravel, or shingle. *Eggs* 2–4, ovate, light olive or olive-buffy, speckled or spotted with dark brown, blackish, and purplish gray.)

Species.

COMMON CHARACTERS.—Bill bright red in the adult (drying to dull reddish or yellowish); head, neck, and upper parts blackish (plumage entirely blackish in some species).

a^1. Plumage parti-colored or pied (white beneath).

b^1. Entire rump and lower back white.

Adult: Head, neck, chest, and upper parts blackish; lower back, rump, upper tail-coverts, base of tail, greater wing-coverts, and lower parts white. *Adult in winter:* "Differs from summer plumage in having a white patch on throat, and the white spot under the eye is rather larger." (DRESSER.) *Young:* Similar, but black portions more brown, the feathers of back and wings with rusty borders, bill more brownish, etc. *Downy young:* "Head, neck, and upper parts generally sooty grayish, the down tipped with rusty buff, and variegated, especially on the crown and back, with black; under-parts below throat black." (DRESSER.) Length about 16.00, wing about 10.25, culmen 3.10, depth of bill at base .55, tarsus 2.00, middle toe 1.40. *Eggs* 2.23 × 1.54, deep dull buff, sharply spotted (sometimes lined also) with vandyke-brown, brownish black, and purplish gray. *Hab.* Sea-coasts of Europe, and of parts of Asia and Africa; occasional in Greenland.

285. **H. ostralegus** LINN. **Oyster-catcher.**

b^2. Entire rump and lower back dusky.

c^1. Breast white, like belly, etc.; bill very stout, its greatest depth forward of nostril exceeding .45 of an inch; middle toe, with claw, more than 1.75.

d[1]. Back, scapulars, and wing-coverts (except greater) grayish brown, or brownish slate; upper tail-coverts entirely white in adult; under primary coverts almost wholly white. *Adult:* Head and neck plumbeous-black; bill bright red (in life). *Young:* Head and neck dull blackish, the top of the former speckled with pale brown; feathers of upper parts bordered with dull buff; bill brownish. *Downy young:* Head and neck dull light grayish, finely mottled with darker, and with a narrow line of black behind eye; rest of upper parts light fulvous-gray, finely mottled with darker, and relieved by two narrow stripes of black along the back; lower parts white. Length 17.00–21.00, wing 9.80–10.25, culmen 2.85–3.50, greatest depth of bill forward of nostril .48–.55, tarsus 2.05–2.55, middle toe (without claw) 1.20–1.55. *Eggs* 2–3, 2.21 × 1.58, light dull creamy buff, spotted with black, dark brown, and purplish gray. *Hab.* Coasts of America, from Nova Scotia and southern California to southern Brazil and Chili.

286. **H. palliatus** Temm. **American Oyster-catcher.**

d[2]. Back, scapulars, and wing-coverts sooty black; shorter upper tail-coverts entirely black, the longer ones varied with black at ends; under primary coverts chiefly black; wing 10.00, culmen 3.12–3.42, greatest depth of bill forward of nostril .50, tarsus 2.12–2.20, middle toe, without claw, 1.65. *Hab.* Galapagos Islands.

(20.) **H. galapagensis** Ridgw. **Galapagos Oyster-catcher.**[1]

c[2]. Breast uniform black; bill very slender, its greatest depth forward of nostril not exceeding .40 of an inch; middle toe, with claw, much less than 1.75.

Adult: Back, scapulars, and wing-coverts (except greater) sooty black, with faint greenish gloss; upper tail-coverts (except shorter median ones), entirely white; nearly all the under wing-coverts uniform black; wing 10.00–10.60, culmen 3.00–3.05, greatest depth of bill forward of nostril .38–.40, tarsus 1.75–1.95, middle toe 1.20–1.30. *Hab.* Tierra del Fuego.

H. leucopodus Garnot. **White-footed Oyster-catcher.**[2]

a[2]. Plumage entirely blackish.

Adult: Uniform brownish black, or dark sooty brown, the head and neck plumbeous-black. *Young:* General color more brownish, many of the feathers (especially wing-coverts and scapulars) having paler (dull buff or rusty) tips.

b[1]. Length 17.00–17.50, wing 9.60–10.75, culmen 2.50–2.95, greatest depth of bill forward of nostril .45–.52, tarsus 1.85–2.25, middle toe 1.30–1.65. *Eggs* 2.18 × 1.52, light olive-buff or buffy olive, speckled or sparsely spotted with brownish black and purplish gray. *Hab.* Pacific coast of North America, from Lower California north to the Aleutian Islands and across to the Kurils.... 287. **H. bachmani** Aud. **Black Oyster-catcher.**

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[1] *Hæmatopus galapagensis* Ridgw., Auk, iii. July, 1886, 331.

[2] *Hæmatopus leucopodus* Garnot, Ann. des Sc. Nat. vii., 1826, 47.

*b*². Length 18.00–20.00, wing 10.25–10.80, culmen 2.82–3.00, greatest depth of bill anterior to nostril .60, tarsus 2.10–2.20, middle toe 1.70–1.75. *Hab.* Coast of Chili.

H. ater Vieill. **Chilian Black Oyster-catcher.**[1]

Family JACANIDÆ.—The Jacanas. (Page 143.)

Genera.

(Characters same as those given for the Family)....... **Jacana.** (Page 183.)

Genus JACANA Brisson. (Page 183, pl. LVI., fig. 6.)

Species.

Adult: Head, neck, chest, and upper back uniform greenish black; quills and secondaries pale yellowish green, bordered at tips with dusky; rest of plumage uniform rich purplish chestnut. *Young:* Top of head grayish brown, bordered along each side by a broad superciliary stripe of buffy white; a dusky streak behind eye extending to hind-neck, which is also dusky or dull brownish; rest of head and neck, with whole lower parts, except sides, buffy white; upper parts grayish brown, the feathers more or less distinctly tipped with rusty buff (obsolete in older specimens), the quills pale greenish, as in adult. Length about 8.50, wing 4.50–5.40, culmen 1.15–1.40, tarsus 1.90–2.35, middle toe 1.85–2.25. *Eggs* 1.22 × .94, olive-tawny or tawny olive, marked all over with confused "pen-lines" of black, and occasional "blots" of same. *Hab.* Whole of Middle America, from northern Mexico (including the lower Rio Grande Valley in Texas) to Colombia; Cuba; Haiti.

288. **J. spinosa** (Linn.). **Mexican Jacana.**

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[1] *Hæmatopus ater* Vieill., Gal. Ois. ii. 1825, 88, pl. 220.

ORDER **GALLINÆ**.—THE GALLINACEOUS BIRDS.

(Page 2.)

Families.

a^1. Hind-toe small, short (much less than half as long as lateral toes), and inserted above the level of the anterior toes. (Suborder *Phasiani.*)

  b^1. Tarsi without spurs; head entirely feathered (except sometimes over eyes), and tail not vaulted.. **Tetraonidæ.** (Page 184.)

  b^2. Tarsi with spurs; head naked, or else tail long and vaulted. **Phasianidæ.** (Page 205.)

a^2. Hind-toe well developed, lengthened (decidedly more than half as long as the lateral toes), and inserted on a level with the anterior toes. (Suborder *Penelopes.*).. **Cracidæ.** (Page 207.)

FAMILY **TETRAONIDÆ**.—THE GROUSE, PARTRIDGES, AND QUAILS.

(Page 184.)

Genera.

a^1. Tarsi and nasal fossæ entirely naked; sides of toes not pectinated; smaller (wing less than 6.00). (Subfamily *Perdicinæ.*)

  b^1. Cutting-edge of lower mandible without serrations; upper part of tarsus feathered below the joint; first quill longer than seventh.

    c^1. Tail very short, composed of 12 soft feathers entirely concealed by the coverts; first quill longest, or at least longer than third; small (wing not over 4.50).............................. **Coturnix.** (Page 186.)

    c^2. Tail more than one-third as long as wing, extending considerably beyond coverts, and composed of 18 firm, broad feathers; first quill shorter than sixth; rather large (wing over 6.00). *Perdix.*[1]

  b^2. Cutting-edge of lower mandible, toward end, more or less serrated; upper part of tarsus not feathered below joint; first quill shorter than seventh.

    c^1. Tail at least half as long as the wing, the feathers normal, and very distinct from the coverts; claws normal, the middle one much shorter than exposed culmen.

      d^1. Tail about as long as the wing; very large (wing more than 5.50, tarsus about 2.00); plumage very plain, the head without a distinct crest.. *Dendrortyx.*[2]

      d^2. Tail decidedly shorter than wing; medium to very small (wing not more than 5.50, tarsus much less than 2.00); plumage much varied, the head more or less conspicuously crested.

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[1] *Perdix* BRISS., Orn. i. 1760, 219. Type, *Tetrao perdix* LINN.

This genus includes the Partridge of Europe (*P. perdix*), a handsome game bird, about as much larger than the American "Bob Whites" as the latter are larger than the Quail of Europe (*Coturnix coturnix*).

[2] *Dendrortyx* GOULD, Mon. Odont. 1850, 20. Type, *Ortyx macroura* JARD. & SELBY.

e^1. Tail more than two-thirds as long as wing; bill small and weak, its depth at base less than length of middle claw. **Callipepla.** (Page 191.)

e^2. Tail less than two-thirds as long as wing; bill stouter, its depth at base decidedly greater than length of middle claw.

f^1. Head with a conspicuous crest of long narrow feathers exceeding tarsus in length; plumage of upper parts plain olive; wing more than 5.00. **Oreortyx.** (Page 190.)

f^2. Head not conspicuously crested, or else with longest feathers much shorter than tarsus; plumage of upper parts much varied with spots, bars, and other markings; wing less than 5.00.

g^1. Head not distinctly crested... **Colinus.** (Page 186.)

g^2. Head distinctly crested..................... *Eupsychortyx.*[1]

c^2. Tail much less than half as long as wing, the feathers soft, narrow at tips, and hardly distinguishable from the coverts; claws very large, broad, and blunt, the middle one nearly as long as the exposed culmen. Head with a full soft crest of blended feathers; sexes exceedingly different in colors................... **Cyrtonyx.** (Page 193.)

a^2. At least upper half of tarsus feathered (usually feathered to toes); nasal fossæ densely feathered; sides of toes pectinated in winter (the points deciduous in summer); larger (wing more than 6.00). (Subfamily *Tetraoninæ.*)

b^1. Legs feathered down to base of toes.

c^1. Tail longer than wings, graduated, the feathers narrow and pointed; wing more than 10.00 .... **Centrocercus.** (Page 204.)

c^2. Tail shorter than wings, not graduated (or else extremely short, with middle pair of feathers longer than rest), the feathers broad and rounded, or nearly truncated, at tips; wing less than 10.00.

d^1. Tail about half as long as wing, graduated or much rounded.

e^1. Tail graduated, with middle pair of feathers projecting much beyond the rest; no tufts or other elongated feathers on neck................................... **Pediocætes.** (Page 203.)

e^2. Tail rounded, middle pair of feathers not projecting beyond rest; sides of neck with a conspicuous tuft of straight, rather stiff feathers, and beneath these an inflatable air-sac. **Tympanuchus.** (Page 202.)

d^2. Tail more than half as long as wing, rounded or nearly even; no tufts, ruffs, or other conspicuous feathers on neck.

e^1. Toes feathered; tail less than two-thirds as long as wing; plumage becoming chiefly or entirely pure white in winter................................. **Lagopus.** (Page 198.)

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[1] *Eupsychortyx* GOULD, Mon. Odont. 1850, 15. Type, *Tetrao cristatus* LINN.

e^{2}. Toes entirely naked; tail two-thirds to four-fifths as long as
(21.) wing; plumage never white. **Dendragapus.** (Page 194.)

b^{2}. Lower portion of tarsus completely naked; tail nearly as long as wing, fan-shaped; sides of neck with a broad tuft or ruff of soft, broad-webbed feathers.. **Bonasa.** (Page 197.)

GENUS **COTURNIX** BONNATERRE.[1] (Page 184.)

Species.

Adult male: Above light brown, the back, scapulars, rump, and upper tail-coverts broadly and sharply streaked with buff, each buff streak being bordered along each side by a narrow blackish streak; in addition to these markings the feathers have narrow bars of blackish and pale buffy brown, the scapulars with irregular spots of the former; wing-coverts barred with dusky and buffy, and marked with narrow mesial streaks of buffy or whitish; quills dull grayish brown, spotted or irregularly barred on outer webs with ochraceous-buff; a distinct superciliary stripe of buffy or dull whitish; under-part and sides of head and neck whitish or buffy, the middle of the throat with more or less of a brownish or dusky longitudinal patch, connecting below with a dusky or brownish stripe extending obliquely upward to ear-coverts; below and behind these brownish markings, and usually separated from them by a whitish or buffy space, another, usually interrupted line of dusky or brownish spots, these sometimes blended into a continuous stripe; chest and breast light cinnamon-brownish, with paler shaft-streaks, the lateral portions more broadly streaked, the lighter streaks bordered along each side by blackish; rest of lower parts buffy, the sides and flanks streaked with dusky. *Adult female:* Similar to the male, but throat without dusky markings, and chest and breast buffy, spotted, longitudinally, with blackish. *Downy young (partially feathered):* "Centre of crown dark brown, with a central buff stripe; sides of the crown warm reddish buff; upper parts generally blackish brown, barred with warm buff, and marked with long buffy white stripes; chin, throat, and sides of head buffy white; rest of the under-parts buffy white, closely spotted with blackish brown." (DRESSER.) Length about 7.00, wing 4.10–4.30, culmen .25–.30, tarsus 1.00–1.15. *Hab.* Northern portions of eastern hemisphere in general; introduced into (and partially naturalized in?) various portions of eastern United States.

C. coturnix (LINN.). **European Quail.**[2]

GENUS **COLINUS** LESSON. (Page 185, pl. LVI., fig. 1.)

Species.

COMMON CHARACTERS.—Upper parts mottled grayish, tinged more or less with rusty and more or less vermiculated with dusky and whitish; quills plain grayish, and tail chiefly bluish gray; lower parts usually whitish, varied with black and rusty, the sides and flanks striped with rufous. (Adult males of some species with lower parts chiefly uniform cinnamon-rufous.) *Adult males* with head black, or striped with black and white, or brown and white. *Adult females* with head striped with brown and ochraceous or buff, the chin and throat entirely of the latter color. *Nest* of dried grasses, etc. (sometimes arched over on top), embedded in ground or placed on ground, in meadows, grain-fields, etc. *Eggs* numerous (12–upward of 20), pyriform-ovate, white, usually more or less stained (adventitiously?) with light brown.

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[1] *Coturnix* BONNATERRE, Tabl. Encyl. et Méth. i. 1790, 217. Type, *Tetrao coturnix* LINN.

[2] *Tetrao coturnix* LINN., S. N. ed. 10, i. 1758, 161. *Coturnix coturnix* LICHT., Nom. Mus. Berol. 1854, 84.

*a*¹. *Adult males* with feathers of sides and flanks rufous edged with white and with black line between white and rufous, or else entirely rufous. *Adult females* (except in *C. virginianus cubanensis*) with feathers of sides and flanks rufous edged with white, the two colors separated by a blackish line.

*b*¹. *Adult males* with lower parts always whitish, varied with black and rusty as above described.

Adult males: Broad superciliary stripe, and broad patch covering chin, throat, and malar region, white; rest of head black, sometimes, especially in winter plumage, mixed with or overlaid by brown;[1] sides of neck spotted with white and black, the spots of triangular form. *Adult females* similar to males, but throat-patch and superciliary stripe buff or ochraceous, and the darker stripes of head chiefly brown or rusty. *Young:* Top of head and ear-coverts dusky slate, or dull grayish; rest of head dull soiled whitish; chest and breast dull grayish brown or brownish gray, streaked with whitish; belly plain white; back rusty brownish, more or less streaked with whitish and spotted with blackish. *Downy young:* Head dingy buff, paler, or nearly white, on throat, with a blackish line behind eye and a small spot of same above corner of mouth; a patch of chestnut on occiput, gradually narrowing anteriorly to a line along middle of forehead; upper parts nearly uniform chestnut; lower parts pale grayish buff, deepening into dull brownish on sides.

*c*¹. Feathers of flanks with the black markings narrow, only occasionally, or not at all, interrupting the white edgings; black markings on breast and belly narrow, always much narrower than the white interspaces; chest usually chiefly, or entirely, light cinnamon.

*d*¹. Upper parts with much of rusty, usually with conspicuous large black blotches on scapulars, tertials, and lower back, and without very distinct light bars. *Adult male* usually without a well-defined band of uniform pale cinnamon across the chest, immediately beneath the black collar.

*e*¹. Larger, with colors averaging lighter, especially on lower parts, where black markings are narrow and usually decidedly V-shaped. Length 9.50–10.75, wing 4.30–4.70 (average about 4.55), tail 2.40–2.90 (2.70), culmen .55–.65 (.59), depth of bill at base .33–.40 (.35), tarsus 1.20–1.50 (1.38), middle toe 1.10–1.22 (1.18). *Eggs* 1.18 × .94. *Hab.* Eastern United States, west to eastern Minnesota, Nebraska, Kansas, Indian Territory, and Texas, south to Georgia, Alabama, and other Gulf States.

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[1] Partially melanistic examples sometimes occur in which the throat is partly or even wholly black. The *Ortyx castaneus* of Gould was probably based on a specimen of this character.

289. **C. virginianus** (Linn.). **Bob White.**

*e*². Smaller, with colors averaging darker, especially on lower parts, where black markings are broader and usually more transverse. Wing 4.10–4.50 (average about 4.28), tail 2.60–2.90 (2.76), culmen .57–.62 (.60), depth of bill at base .36–.42 (.38), tarsus 1.13–1.28 (1.19), middle toe 1.03–1.17 (1.09). *Eggs* 1.18 × .94. *Hab.* Florida and Cuba.

289*a*. **C. virginianus floridanus** (Coues.)
Florida Bob White.

*d*². Upper parts with little rusty (except anteriorly), an olive-grayish tint prevailing, the scapulars, tertials, and lower back usually without conspicuous black blotches, and the general surface usually distinctly barred with lighter; black markings of lower parts usually broad and nearly transverse, as in *C. virginianus floridanus*. *Adult male* usually with a very distinct band of uniform pale cinnamon across chest, immediately beneath the black collar.

Wing 4.20–4.65 (4.39), tail 2.20–2.70 (2.44), culmen .50–.60 (.59), depth of bill at base .30–.40 (.36), tarsus 1.15–1.35 (1.27), middle toe .95–1.15 (1.07). *Eggs* 1.18 × .94. *Hab.* Texas and northeastern Mexico, north to western Kansas.

289*b*. **C. virginianus texanus** (Lawr.).
Texan Bob White.

*c*². Feathers of flanks with black markings heavy, broken into irregular figures, often enclosing a white spot—the edge never continuously white; black markings on breast and belly very irregular or much broken, with frequently a longitudinal tendency; chest usually chiefly or entirely black, or striped with black and rufous, in the male, coarsely spotted with black, dull white, and rusty in the female.

Wing 4.00–4.15 (4.07), tail 1.91–2.20 (2.07), culmen .58–.63 (.60), depth of bill at base .30–.35 (.32), tarsus 1.12–1.17 (1.14), middle toe 0.98–1.08 (1.04). *Hab.* Cuba.

C. virginianus cubanensis (Gould). **Cuban Bob White.**[1]

*b*². *Adult males* with lower parts chiefly uniform cinnamon-rufous or cinnamon-color.

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[1] *Ortyx cubanensis* Gould, Mon. Odont. 1850, pl. 2.

c^1. *Adult males* with throat-patch and broad superciliary stripe always white.

d^1. Very similar in color to *C. virginianus texanus*, but darker, the female hardly distinguishable from the same sex of that species, the male, however, very differently colored beneath, the lower parts being uniform cinnamon or cinnamon-rufous; wing 4.10–4.50 (4.39), tail 2.50–3.00 (2.83), culmen .55–.60 (.58), tarsus 1.06–1.40 (1.23), middle toe 1.05–1.23 (1.12). *Hab.* Southwestern Mexico, from San Luis Potosi, Guanajuato, and Guadalajara to Mazatlan.

C. graysoni (Lawr.). **Grayson's Bob White.**

d^2. Similar to *C. graysoni*, but still darker in color, with the black across fore-neck spread downward over the chest, and the size decidedly smaller; wing about 3.80–4.00, tail 2.05, culmen .60, tarsus 1.10, middle toe 1.05. *Hab.* Southeastern Mexico (Vera Cruz).

C. pectoralis (Gould). **Black-breasted Bob White.**[1]

c^2. *Adult males* with whole under side of head black, the white superciliary stripe usually much reduced in width or sometimes obsolete.

d^1. Smaller and darker. *Adult male* with black of throat extended over the breast (as in *C. pectoralis*), and feathers of breast, etc., sometimes margined with black; wing 4.00–4.20, tail 2.25–2.60, exposed culmen .50–.55, tarsus 1.10, middle toe .95–1.05. *Hab.* Southern Mexico (Tabasco and Tehuantepec).

C. coyolcos (Müll.). **Coyolcos Bob White.**[2]

d^2. Larger and much lighter colored. *Adult male* with black of throat not extended over chest, which is entirely uniform cinnamon or cinnamon-rufous, like other lower parts. *Female* hardly distinguishable from that of *C. virginianus texanus*, but usually with a more decided pale cinnamon band or patch across upper part of chest and the belly more distinctly and heavily barred. Wing 4.40–4.70 (4.49), tail 2.70–3.00 (2.81), culmen .52–.65 (.60), depth of bill at base .32–.40 (.35), tarsus 1.12–1.30 (1.18), middle toe 1.00–1.10 (1.06). *Hab.* Sonora and southern Arizona......... 291. **C. ridgwayi** Brewst. **Masked Bob White.**

a^2. *Adult male* with feathers of sides and flanks white centrally, with broad rufous margins. *Adult female* with feathers of sides and flanks clear umber-brown centrally, this enclosed within a broad U-shaped mark of black, the edges broadly white.

Adult male: Sides of forehead, superciliary stripe, lores, cheeks, and whole chin and throat, uniform black; broad stripe along each side of crown and occiput, another from beneath eye across ear-coverts, and ground-color of chest, dull white; middle of crown and occiput rusty brownish, mixed with dusky; feathers of hind-neck and upper back rufous, each marked with a central oval spot of rusty white; feathers of breast and belly white centrally, broadly bordered with black. *Adult female:* Very similar to same sex of *C. virginianus cubanensis*, but smaller, the sides and flanks less barred with black, more white on breast, and ground-color of upper parts clearer grayish. Wing 4.00–4.20, tail 2.25–2.60, culmen .60, tarsus 1.12–1.20, middle toe 1.05–1.10. *Hab.* Yucatan.

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[1] *Ortyx pectoralis* Gould, P. Z. S. 1842, 182; Mon. Odont. 1850, pl. 5.

[2] *Tetrao coyoleos* (*err. typ.*) Müller (Ph. St.), Nat. Syst. Suppl. 1776, 129. *Tetrao coyolcos* Gmel., S. N. i. 1788, 763. *Ortyx coyolcos* Gould, Mon. Odont. 1850, pl. 6. *Colinus coyolcos* Brewst., Auk, ii. Apr. 1885, 200 (in text).

C. nigrogularis (Gould). **Yucatan Bob White.**[1]

Genus OREORTYX Baird. (Page 185, pl. LVI., fig. 3.)

Species.

Adult male: Upper parts plain brown or olive, the inner webs of the tertials broadly edged with buffy or ochraceous, producing, when wings are closed, a distinct stripe on each side of rump; breast and part of head plumbeous; crest black; entire throat uniform rich chestnut, growing blackish along upper posterior border, and sending a blackish branch up to the eye; chin, anterior portion of malar region, lower portion of lores, and distinct line bordering the throat-patch from the posterior angle of the eye downward, white; flanks rich chestnut, broadly barred with black and white; thighs rufous, and under tail-coverts black. *Adult female:* Hardly distinguishable in color from the male, but crest usually smaller. *Young:* Head, neck, and back grayish brown, speckled with white; breast more decidedly gray, with larger, more triangular, white spots; throat and cheeks mixed whitish and dusky; crest-feathers blackish, their tips speckled or zigzagged with pale fulvous; scapulars, wing-coverts, tertials, and tail-feathers pale brownish, finely vermiculated with dusky, the first more or less blotched with black, and the tertials edged with the same, with a subedging of pale fulvous; belly whitish; flanks washed with chestnut; a dusky patch on ear-coverts, with a whitish line just above. *Downy young:* Head and neck light brownish buff, deeper on lores, forehead, and a very broad superciliary stripe, the space enclosed between the two latter, of opposite sides, and also a broad stripe down middle of back and rump, dark chestnut, bordered along each side by blackish; a broad pale buffy or dull whitish stripe along each side of rump, throwing off, at about midway of its length, a lateral branch obliquely across the flanks, this last also bifurcating at about the middle and throwing off posteriorly a broad stripe parallel with that of the rump, the space between the two, and also that bordering the outer side of anterior half of rump-stripe and anterior edge of main flank-stripe, brownish black, or dark seal-brown; on side of head, behind eye, a broad V-shaped mark of brownish black, having its apex at the posterior corner of the eye; breast and belly dull grayish white. Length about 10.50–11.50, wing 5.25–5.40, tarsus 1.18–1.40. *Eggs* 1.36 × 1.02, cream-color, or creamy buff, varying as to depth of color.

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[1] *Ortyx nigrogularis* Gould, P. Z. S. 1842, 181; Mon. Odont. 1850, pl. 4.

*a*¹. Above deep olive-brown or umber, this color usually continued uninterruptedly over hind-neck to the crest; inner edges of tertials deep buff or ochraceous; forehead entirely ashy. *Hab.* Pacific coast district, from San Francisco north to Oregon................ 292. **O. pictus** (Dougl.). **Mountain Partridge.**

*a*². Above grayish olive, the hind-neck usually partly or wholly plumbeous, like the breast; inner edges of tertials light buff or buffy whitish; forehead distinctly paler (often whitish) anteriorly. *Hab.* Sierra Nevada (both sides) from eastern Oregon southward; southern coast district of California?; Lower California?......... 292*a*. **O. pictus plumiferus** (Gould). **Plumed Partridge.** (22.)

Genus CALLIPEPLA Wagler. (Page 185, pl. LVI., figs. 4, 5.)

Species.

*a*¹. Tail three-fourths as long as wing, or longer; flanks striped; tail-feathers plain bluish gray; tertials and scapulars without black spots; inner webs of tertials edged with buffy or whitish, producing a conspicuous stripe along each side of rump when wings are closed; wing 4.50, or more.

*b*¹. Crest short, blended with, or not separated distinctly from, general feathering of the crown; sexes essentially alike in plumage. (Subgenus *Callipepla.*)

Adult: Tip of crest white; rest of head plain light brownish or grayish, paler and more buffy on throat; hind-neck, upper back, and anterior lower parts bluish gray, each feather sharply bordered with black, producing a scaled appearance; scapulars and wings pale brownish; flanks streaked with white; other lower parts buffy, the belly sometimes with a patch of chestnut-brownish. *Young:* Upper parts brownish gray, becoming more decidedly brown on scapulars and wing-coverts, the feathers marked with a mesial streak of white, and (except on hind-neck) spotted with blackish; lower back, rump, and upper tail-coverts ash-gray, sometimes more or less distinctly spotted with white; lower parts dull whitish, the breast brownish gray, marked with wedge-shaped streaks or spots of white, often mixed with dusky spots. Length about 9.50–12.00, wing 4.50–5.00, tail about 4.10–4.50, tarsus about 1.30. *Eggs* 1.28 × .98, white, buffy white, or pale buffy, usually more or less distinctly sprinkled or speckled with brown.

*c*¹. Scapulars and wings pale grayish brown, or brownish gray; belly pale buffy or whitish, usually without trace of chestnut or brown patch, in either sex. *Hab.* Northwestern Mexico and contiguous border of United States, from western Texas to southern Arizona. 293. **C. squamata** (Vig.). **Scaled Partridge.**

*c*². Scapulars and wings deep grayish brown (sometimes hair-brown); posterior lower parts deeper buffy (sometimes decidedly ochraceous), the belly with an extensive patch of rusty chestnut in the male (sometimes indicated in the female also). *Hab.* Eastern Mexico (south to San Luis Potosi) and lower Rio Grande Valley of Texas.

293*a*. **C. squamata castanogastris** Brewst.
Chestnut-bellied Scaled Partridge.

b^2. Crest lengthened, very distinct from general feathering of crown, very narrow at the base, all the feathers enclosed between the more or less appressed webs of the anterior plume; sexes very different in plumage. (Subgenus *Lophortyx* Bonaparte.)

c^1. Crest black; throat uniform black in adult males, and tertials without chestnut.

d^1. Flanks olive-brown or grayish, streaked with white. *Adult male:* Belly with black scale-like markings, and a central patch of chestnut; forehead buffy whitish, with black shaft-streaks; occiput olive, or smoky brown. *Adult female:* Head without black or white markings, the prevailing color plain smoky grayish or brownish; belly without chestnut patch, and black scale-like markings less distinct. *Young:* Above finely mottled brownish, marked with whitish mesial streaks, widening at tip, and bordered along each edge with blackish; throat plain dull whitish; belly dull white, faintly barred with grayish; chest dull grayish, with triangular whitish spots. *Downy young:* Dingy whitish, the upper parts tinged with pale rusty, and irregularly mottled, longitudinally, with deeper brownish; a broad stripe of deep brown from occiput down nape; ear-coverts with an indistinct dusky spot; lower parts plain dull whitish. Length about 9.50, wing 4.35–4.70, tail 4.10–4.70, tarsus 1.20–1.25. *Eggs* 1.26 × .98, white, buffy white, or pale buff, more or less distinctly sprinkled, speckled, spotted, or blotched with some shade of umber-brown.

e^1. Upper parts deep smoky brown, the inner edges of tertials deep buffy or ochraceous; flanks deep olivaceous or smoky brown. *Hab.* Coast valleys of California and Oregon.

294. **C. californica** (Shaw). **California Partridge.**

e^2. Upper parts grayish brown, with inner edges of tertials buffy or whitish; flanks olive-grayish, or grayish brown. *Hab.* Interior districts of California and western Oregon, south to Cape St. Lucas.

294*a*. **C. californica vallicola** Ridgw.
Valley Partridge.

d^2. Flanks rich chestnut, streaked with white. *Adult male:* Belly without scale-like markings, and with a central patch of black; forehead dusky; occiput rufous. *Adult female:* Similar to that of *C. californica vallicola*, but flanks chestnut, and belly without scale-like markings. *Young:* Above grayish brown, minutely mottled, the feathers with white shaft-streaks, widening at end, and with a dusky spot on each side; belly dull white, without trace of markings; chest brownish gray, the feathers tipped and streaked with whitish. Length about 9.50–10.00, wing 4.45–4.70, tail 4.10–4.70, tarsus 1.20–1.25. *Eggs* 1.24 × .94, similar to those of *C. californica*, but usually with deeper ground-color and larger and more distinct spots. *Hab.* Northwestern Mexico and contiguous portions of United States, from Arizona to western Texas, north to southern Utah.

295. **C. gambeli** (Nutt.). **Gambel's Partridge.**

c^2. Crest buffy or ochraceous; throat white, spotted with black, and tertials blotched with chestnut, in adult male.

Adult male: Sides of head streaked with black and white; hind-neck broadly streaked or striped with bluish gray and rusty; upper parts mainly grayish brown, the tertials and longer scapulars chestnut, broadly edged *on both webs* with white; breast and belly bluish gray, the latter marked with roundish spots of white; flanks mainly deep cinnamon-rufous, the feathers edged, or spotted along edges, with white; wing 4.25–4.50, tail 3.50–3.60, tarsus 1.25. *Hab.* Western Mexico (vicinity of Mazatlan).

(23.) **C. elegans** (Less.). **Elegant Partridge.**[1]

a^2. Tail less than two-thirds as long as wing; flanks broadly and sharply banded with black and white; tail-feathers brownish, barred with dusky and whitish; scapulars and tertials spotted with black, the inner webs of the latter without light edging; wing less than 4.00; sexes alike in plumage; crest narrow, distinct from feathers of crown, but with webs not appressed. (Subgenus *Philortyx* Gould.[2])

b^1. Cheeks, chin, and throat white; bill black; wing 3.80–3.90, tail 2.40–2.60, tarsus 1.10–1.12. *Hab.* Southwestern Mexico (Plains of Colima, etc.).

C. fasciata (Gould). **Banded Partridge.**[3]

b^2. Cheeks, chin, and throat black; bill brownish; wing 3.80, tail 2.00, tarsus 1.00. *Hab.* Southeastern Mexico (Pueblo).

C. personata Ridgw. **Black-faced Partridge.**[4]

Genus CYRTONYX Gould. (Page 185, pl. LVI., fig. 2.)

Species.

Common Characters.—*Adult males:* Sides of head marked with bold black and white stripes, the chin and throat, and narrow collar across fore-neck (ascending to beneath crest), intense velvety black; longer feathers of crest uniform brownish;

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[1] *Ortyx elegans* Less., Cent. Zool. 1832, pl. 61. *Callipepla elegans* Gould, Mon. Odont. 1850, pl. 18.

[2] *Philortyx* Gould, Mon. Odont. 1850, 17. Type, *Ortyx fasciatus* Gould.

[3] *Ortyx fasciatus* Gould, P. Z. S. 1843, 133.

[4] *Philortyx personatus* Ridgw., Auk, iii., July, 1886, 333.

upper parts brownish, more or less barred and spotted with black, and conspicuously streaked with whitish, buff, or rufous; outer webs of quills spotted with white; anal region, thighs, and lower tail-coverts uniform velvety black.

a^1. Adult male without rufous or chestnut on flanks.

Adult male: Crest plain brownish, spotted with black anteriorly; sides of head chiefly pure white, relieved by a stripe (widening posteriorly) of dark plumbeous extending from corner of mouth backward to beneath ears, throwing off a branch (darker in color) on each side of forehead, and a postocular black stripe or elongated patch; scapulars, etc., marked with broad medial streaks of buffy or whitish; entire sides and flanks dark plumbeous, marked with numerous round spots of pure white; belly and middle line of breast dark chestnut. *Adult female:* Prevailing color light pinkish cinnamon, the upper parts streaked and barred much as in the male; head without white or black stripes; sides with a few irregular streaks or bars of black. *Young:* Similar to adult female, but lower parts dull whitish, many of the feathers, especially on breast and sides, with transverse spots of blackish, on both webs. *Downy young:* Head pale brown, becoming gradually whitish on throat, the occiput with a broad patch of chestnut; a blackish streak behind eye; upper parts rusty brownish, indistinctly spotted with dusky, the rump bordered along each side by a whitish stripe; lower parts nearly uniform dull white. Length about 8.75, wing 4.90–5.30, tarsus 1.05–1.10, middle toe .85–.90. *Eggs* 1.26 × .94, plain white. *Hab.* Western and central Mexico, from Mazatlan and Valley of Mexico north to western Texas, New Mexico, and Arizona.

296. **C. montezumæ** (Vig.). **Massena Partridge.**

a^2. Adult males with flanks varied with rufous or chestnut.

b^1. Adult male with flanks rich chestnut, slightly varied with black and plumbeous. *Hab.* Guatemala and southern Mexico.

C. ocellatus Gould. **Ocellated Partridge.**[1]

b^2. Adult male with flanks plumbeous, barred and spotted with chestnut. *Hab.* "Mexico."

C. sallæi Verr. **Salle's Partridge.**[2]

Genus DENDRAGAPUS Elliot. (Page 186, pl. LVII., figs. 1, 2.)

(*Nest* on ground in woods. *Eggs* about 8–15, buffy or pale brownish, sprinkled, speckled, or, more rarely, spotted with dark brown.)

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[1] *Ortyx ocellatus* Gould, P. Z. S. 1836, 75 (Guatemala). *Cyrtonyx ocellatus* Gould, Mon. Odont. 1850, pl. 8.

Cyrtonyx sumichrasti Lawr., Ann. Lyc. N. Y. i. 1877, 51 (Tehuantepec).

Obs.—There are differences observable between two males from Guatemala on the one hand, and one from Tehuantepec (the type of *C. sumichrasti*) on the other. If these should prove constant the latter bird would require recognition as a geographical race (*C. ocellatus sumichrasti*).

[2] *Cyrtonyx sallæi* Verreaux, Arcana Naturæ, i. 1860, pl. 4.

Species.

a^1. Tail of 20 feathers; sides of neck in male with a distinct inflatable air-sac; wing of male more than 7.00. (Subgenus *Dendragapus.*)

Adult male: Above dusky grayish or dull blackish, usually more or less mottled, especially on wings (sometimes distinctly and coarsely mottled over whole surface); tail black, with or without gray terminal band; lower parts chiefly plain slate-gray, more or less varied with white on flanks, etc.; length about 20.00–23.00, wing 9.40–10.00, tail 8.00, weight about 2½ to 3½ lbs. *Adult female:* Similar to the male, but decidedly smaller and colors much less uniform, the upper parts more or less distinctly spotted and barred with buffy or brownish, the chest and anterior part of sides similarly marked; length about 17.50–19.00, wing about 8.70, tail 6.00. *Young:* Above yellowish brown, the feathers with conspicuous shaft-streaks and terminal triangular spots of white, and rather large transverse roundish spots of black; secondaries with broken or mottled bands of dusky and white; lower parts dull whitish, the chest and sides spotted with black; head buffy whitish, spotted with black on crown, and marked along side of head by a dusky stripe. *Downy young:* Above mixed pale chestnut-brown and brownish white, mottled with blackish, this forming six rather irregular and indistinct stripes down rump, and an indefinite number of more confused stripes on top of head, where, however, the mottlings are sometimes broken into irregular spots; on side of head behind eye several irregular spots of black; lower parts plain dull white. *Eggs* buff or cream-color, more or less distinctly sprinkled or speckled (more rarely spotted) with umber-brown.

b^1. Tail tipped with a distinct ash-gray band.

c^1. Lighter colored, with broader tail-band (.50–.80 wide on outermost feather), distinct whitish space on side of neck, and throat mostly white. *Adult male:* Above dark slaty, everywhere finely mottled with gray and light brownish, the hinder scapulars usually with distinct shaft-streaks and terminal spots of white; tail-band 1.00–1.50 wide on middle feathers, .50–.80 wide on outermost. *Eggs* 1.99 × 1.38. *Hab.* Rocky Mountains, west to the Wahsatch, south to New Mexico and Arizona (White and San Francisco Mountains), north to South Pass........ 297. **D. obscurus** (Say). **Dusky Grouse.**

c^2. Darker colored, with narrower tail-band (not more than .40 wide on outermost feather), no distinct whitish space on side of neck, and throat dusky, bordered with white, in adult male. *Adult male:* Above sooty blackish, sometimes nearly uniform, but usually more or less mottled with brownish, especially on wings; scapulars usually without distinct white streaks or spots; tail-band less than 1.00 (usually about .60) wide on middle feathers. *Adult female* much darker than in *D. obscurus*, the upper parts sometimes deeply washed with dark rusty. *Young:* Similar to corresponding stage of *D. ob-*

scurus, but darker colored and more rusty. *Eggs* 1.91 × 1.36. *Hab.* Mountains near Pacific coast, from California to Sitka.

297*a*. **D. obscurus fuliginosus** Ridgw. **Sooty Grouse.**

*b*². Tail without a distinct terminal band of gray. In other respects similar to *D. obscurus*, but tail-feathers broader, more truncated at tip, the tail more even. *Eggs* 1.84 × 1.30. *Hab.* Northern Rocky Mountains, from Montana northward.

297*b*. **D. obscurus richardsonii** (Sab.). **Richardson's Grouse.**

*a*². Tail of 16 feathers; no obvious air-sac on side of neck; wing less than 8.00. (Subgenus *Canachites* Stejn.)

Adult males: Above transversely varied with black and grayish; beneath black, with a white border to the throat, and broad white tips to many of the feathers, the sides and flanks with wedge-shaped streaks of white; tail black, with or without rufous tip. *Adult female:* Above barred with black, gray, and ochraceous, or buffy, the first predominating; beneath whitish (more buffy or ochraceous anteriorly), distinctly and broadly barred with black; flanks and scapulars usually streaked medially with white. *Downy young:* Pale buff-yellow, the top of head, back, and wings pale rusty, or fulvous; stripe on side of head (from bill to end of ear-coverts), two spots on crown, and transverse spots on back and wings black. Length 14.70–16.20, wing about 6.50–7.35, tail 5.00–5.75. *Eggs* buffy or pale brownish, more or less speckled or spotted with deep brown.

*b*¹. *Adult male* with tail tipped with ochraceous-rufous, the upper tail-coverts without white tips. *Adult female* with tail-feathers broadly ochraceous or ochraceous-rufous at tips. *Downy young:* Occiput, back, and rump uniform bright rusty, the first completely encircled with black, and the last sometimes marked with two stripes of the same; rest of plumage, including forehead, fore-part of crown, and broad superciliary stripe, brownish buff, tinged with lemon-yellow on lower parts; two black spots on middle line of forehead, and a black line on side of head, sometimes interrupted in front of eye. (To be immediately distinguished from young of the Ptarmigans by naked toes.) *Eggs* 1.71 × 1.24. *Hab.* Northern North America, east of Rocky Mountains, from northern portions of New England, New York, Michigan, and Minnesota to Alaska (reaching coast at Kadiak, St. Michael's, etc.).

298. **D. canadensis** (Linn.). **Canada Grouse.**

*b*². *Adult male* with tail black to extreme tip (or else tip narrowly margined with pure white), the upper tail-coverts broadly tipped with pure white. *Adult female* with tail-feathers narrowly white at tips. *Eggs* 1.65 × 1.22. *Hab.* Northern Rocky Mountains (chiefly north of the United States), and west to the coast ranges.

(24.) 299. **D. franklinii** (Dougl.). **Franklin's Grouse.**

GENUS **BONASA** STEPHENS. (Page 186, pl. LVIII., fig. 1.)

Species.

Adult male: Above varied with black and different shades of brown or gray, the scapulars and wing-coverts with mesial streaks of buff or whitish, the rump and upper tail-coverts with cordate or oval spots of pale grayish or dull buffy; tail gray or rusty, with several narrow, irregular bands of a paler shade, each immediately preceded by a narrower zigzag blackish bar, and crossed near end by a broad subterminal band of black or dark brown, succeeded by a narrower terminal band of mottled light grayish, and preceded by a similar band; neck-tufts varying from deep black to light rufous, the feathers with glossy terminal margins; throat buffy or ochraceous, sometimes varied with dusky; rest of lower parts mixed white and buffy (the latter chiefly beneath the surface), marked with broad bars of brown, broadest and darkest on flanks; lower tail-coverts buffy, broadly tipped with white. *Adult female:* Essentially similar to the male in plumage, but usually smaller, and with the neck-tufts less developed. *Young:* Scapulars, wing-coverts, and feathers of back pale brownish, marked with large black spots and a broad median stripe of buff; secondaries, including tertials, finely mottled pale brown, rather indistinctly barred, at rather wide intervals, with paler buffy brownish, each bar of this color immediately preceded by a narrower one of dusky, the outer webs of the tertials spotted along the edge with black; quills dull grayish, irregularly, somewhat serrately, edged with dull buffy; head buffy (chin and throat almost white), spotted on top with black, the ear-coverts dusky, streaked with pale buffy or dull whitish; chest ochraceous-buff, gradually fading into white on breast and other lower parts, all the feathers of chest and breast spotted on edges with blackish, producing a coarsely and irregularly striped appearance; sides and flanks marked with larger spots of black; tail-feathers mottled grayish, more or less tinged with rusty, and crossed by several broad blackish bars separated by narrower grayish ones. *Downy young:* Above chestnut-buff, deepening into pale chestnut on occiput, fore-part of wings, lower back, and rump; rest of plumage very pale buff, deeper on sides of head, which are marked with a conspicuous black stripe commencing at posterior corner of eye and extending across ear-coverts. Length 15.50–19.00, wing 7.00–7.50, tail 5.50–7.00. *Nest* on ground in woods. *Eggs* 6–10 or more, buffy, usually plain, but sometimes slightly speckled with brown.

*a*¹. Paler, with brown markings on lower parts rather indistinct (except on flanks), and more or less concealed on breast and belly by broad whitish tips to the feathers, these brown markings usually without distinct darker edges; bars on flanks usually clear hair-brown.

*b*¹. Upper parts mostly or entirely rusty, the tail usually rusty ochraceous. *Eggs* 1.51 × 1.18. *Hab.* Eastern United States, west to edge of Great Plains (?), north to Massachusetts (lowlands), south to Georgia (uplands), Tennessee, Arkansas, etc.

300. **B. umbellus** (LINN.). **Ruffed Grouse.**

b^2. Upper parts mostly or entirely grayish, the tail always gray. *Eggs* 1.59 × 1.18. *Hab.* Rocky Mountains and northward to Alaska (Yukon Valley), east to Manitoba.

300*b*. **B. umbellus umbelloides** (Dougl.). **Gray Ruffed Grouse.**

a^2. Darker, with brown markings on lower parts very conspicuous, everywhere exposed, and bordered by very distinct dusky bars; bars on flanks very dark brown, or brownish black.

b^1. Upper parts with more or less of gray, often mostly grayish, the tail usually gray (sometimes tinged with ochraceous). *Hab.* Eastern Oregon and Washington Territory, east to Moose Factory, Nova Scotia, Maine, etc., southward on mountains of New England, New York, etc.

300*a*. **B. umbellus togata** (Linn.). **Canadian Ruffed Grouse.**

b^2. Upper parts dark rusty, with little if any admixture of gray, the tail usually deep rusty (very rarely grayish). *Eggs* 1.61 × 1.20. *Hab.* Northwest coast, from northern California to British Columbia.

300*c*. **B. umbellus sabini** (Dougl.). **Oregon Ruffed Grouse.**

Genus **LAGOPUS** Brisson. (Page 185, pl. LVIII., fig. 2.)

Species.

Common Characters.—*Winter plumage* pure white, the tail black in most species, and sometimes the lores black also. *Summer plumage* with upper parts (except part of wings) and chest varied with brown, buffy, or grayish and black. *Nest* on ground in open situations. *Eggs* about 10–16, more or less heavily spotted or marbled with dark brown or black on a buffy or light rusty ground.

a^1. Tail black.

b^1. Bill stout (depth at base .40 or more); length 14.00–17.00, wing about 7.00–7.50, bill, from nostril, .40–.42, depth at base, .40–.45; winter plumage never with black on head.

c^1. Shafts of secondaries white.

Male in spring: Head and neck rich chestnut, usually becoming darker below (sometimes quite blackish); rest of plumage white, the back, scapulars, and rump interspersed with feathers of deep brown or rusty, barred with dusky. *Male in summer:* Head, neck, and lower parts (except middle of belly, anal region, and legs) deep cinnamon-rufous, uniform on throat, fore-neck, and chest, barred with black on sides, flanks, and under tail-coverts, tinged with slaty on upper belly; quills and outermost wing-coverts white; rest of upper parts (continuously) irregularly barred with tawny brown and black, most of the feathers indistinctly tipped with whitish. *Female in summer:* Above coarsely and irregularly barred and spotted with black and ochraceous or buffy (the former rather predominating), many of the feathers margined terminally with white;

quills, secondaries, and outermost wing-coverts white; lower parts varying from ochraceous to buffy whitish, coarsely and irregularly barred with black. *Young:* Above coarsely and irregularly varied with black and ochraceous-buff, the latter mostly on or near margins of feathers; chest, breast, and sides ochraceous-buff, coarsely barred with black; other lower parts dull white. *Downy young:* General color olive-buff, tinged with sulphur-yellow on lower parts, and with rusty on chest and upper parts; crown chestnut, bordered all round by a black line, which is continued from occiput down hind-neck in a broad stripe; two more or less distinct blackish stripes on rump, and other upper parts irregularly varied, more or less, with black; a black streak on side of head (most distinct and continuous behind eye). *Eggs* 1.69 × 1.22, ground-color varying from pale buffy to deep brown, more or less speckled, sprinkled, spotted, or marbled with rich brown or black. *Hab.* Northern portions of northern hemisphere; south, in winter, in America, to Sitka, northern New York (accidental), etc.

301. **L. lagopus** (LINN.). **Willow Ptarmigan.**

*c*². Shafts of secondaries black, and quills (sometimes a few of the wing-coverts also) more or less blotched or mottled with dusky. (Summer plumages and young unknown.) *Hab.* Newfoundland.

301*a*. **L. lagopus alleni** STEJN. **Allen's Ptarmigan.**

*b*². Bill small and slender (depth at base less than .40); length 13.00–14.75, wing about 7.00–7.50, bill from nostril about .35, depth at base about .27–.35; winter plumage with lores deep black in male (sometimes in female also).

*c*¹. *Summer males* with upper parts coarsely vermiculated, the back and scapulars with large black blotches (occupying central portions of feathers).

*d*¹. Ground-color of upper parts in summer males grayish brown.

*e*¹. *Summer male:* Above grayish brown coarsely vermiculated with black, the vermiculations having a general tendency to form irregular zigzag bars; scapulars and interscapulars largely black centrally, producing large blotches or irregular spots; outermost wing-coverts, quills, and secondaries (except tertials) white; top of head blackish, the feathers tipped with light brownish; lores black; rest of head mixed dusky and white, the latter predominating on cheeks, chin, and throat; chest and upper breast regularly barred with blackish and light umber-brown; sides similarly marked, but bars finer and more confused; rest of lower parts white, the lower tail-coverts with concealed portion dusky, or sooty slate. *Summer female:* Bright ochraceous, irregularly spotted and barred above with black, beneath more regularly and distantly barred with the same; quills, secondaries, and bend of wing white. *Fall plumage:* Ground-color of upper parts pale brownish, mixed with grayish, very minutely freckled and more coarsely vermiculated with dusky, the latter having a tendency to form irregular spots and coarser bars on back and scapulars; outermost wing-coverts, quills, and secondaries white; head and neck more fulvous and more distinctly barred with dusky; chest, upper breast, sides, and flanks colored and marked much like upper parts, but vermiculations more regular (forming distinct bars anteriorly), and black spots wholly wanting. *Eggs* 1.65 × 1.18, not with certainty distinguishable from) those of *L. lagopus*, but usually less heavily spotted, or less densely speckled, the general aspect averaging lighter in color. *Hab.* Arctic America in general, except northern extremity of peninsula of Labrador and region thence northward, Greenland, and the Aleutian Islands; southeastward to Gulf of St. Lawrence (Anticosti).

302. **L. rupestris** (Gmel.). **Rock Ptarmigan.**

e^2. *Summer male:* Similar to corresponding stage of *L. rupestris*, but less regularly and coarsely barred above. *Summer female:* Above chiefly black, this varied irregularly with pale grayish buff, mostly in form of borders to the feathers and spots along their edges, or, occasionally, imperfect bars, these latter most distinct on wings, where the two colors are in about equal proportion; lower parts light grayish buff, everywhere coarsely barred with black. *Young:* Above light brown, irregularly barred and coarsely blotched with black, this prevailing on back, scapulars, and tertials; chest, breast, sides, and flanks with ground-color more buffy, this more regularly and coarsely barred with black; rest of lower parts dull white. *Downy young:* Similar to same stage of *L. lagopus*, and perhaps not always distinguishable with certainty, but usually darker, with less of rusty tinge above, chestnut of crown darker, sides of head more strongly tinged with olive-grayish, black markings behind eye broader, and usually a black streak or spot under eye, which is apparently wanting in *L. lagopus*. *Eggs* 1.65 × 1.18, similar in color to those of *L. rupestris*. *Hab.* Greenland, islands on western side of Cumberland Gulf, and northern extremity of Labrador (Ungava).......... 302*a*. **L. rupestris reinhardti** (Brehm). **Greenland Ptarmigan.**

d^2. Ground-color of upper parts in summer male dark brownish gray.

Summer male: Above dark brownish gray, vermiculated and coarsely spotted with black, many of the feathers tipped with white; chest, upper breast, and sides similar, but without the black central blotches to the feathers; head and neck more coarsely barred with black, grayish white, and pale grayish buff, the lores entirely black; throat, wings (except tertials, etc.), belly, and lower breast white; under tail-coverts dusky grayish, tipped with white. *Summer female:* More coarsely barred with black and grayish white, mixed with buff, the light bars on chest and under tail-coverts more ochraceous. *Hab.* Newfoundland.

303. **L. welchi** BREWST. **Welch's Ptarmigan.**

c^2. *Summer males* with upper parts very finely and densely vermiculated, the back and scapulars usually without black spots or blotches (never with these very conspicuous?).

d^1. *Summer male:* Ground-color of upper parts deep umber-brown; chest barred with bright tawny brown and black, the lower portion frequently interspersed with uniform blackish feathers. *Summer female:* Not obviously different from the same sex of *L. rupestris.* *Hab.* Island of Unalashka, Aleutian chain.

302*b*. **L. rupestris nelsoni** STEJN. **Nelson's Ptarmigan.**

d^2. *Summer male:* Ground-color of upper parts pale raw-umber brown, mixed with pale grayish; chest and neck barred with pale brownish ochre and black, the lower portion of the former without admixture of dusky feathers. *Summer female:* Ground-color of upper parts ochraceous, mixed with pale grayish buff, narrowly and irregularly barred with black (but with very little of black spotting), many of the feathers tipped with white; sides and flanks similar, but more regularly barred, and without traces of spots; chest and neck coarsely barred with ochraceous and black. *Hab.* Island of Atkha, Aleutian chain......... 302*c*. **L. rupestris atkhensis** (TURNER). **Turner's Ptarmigan.**

a^1. Tail white.

Summer male: Above pale fulvous or dull grayish buff, coarsely vermiculated, barred, and irregularly spotted with black; chest, upper breast, sides, and flanks very heavily spotted (transversely) and barred with black on a whitish ground, usually more or less mixed with feathers having a pale fulvous ground and more narrowly barred with black. *Summer female:* Similar to male, but usually more buffy(?). *Fall male:* Ground-color of upper parts pale fulvous or tawny, mixed with grayish, finely freckled, vermiculated, and irregularly barred with black, occasional feathers showing large irregular spots of the latter color; middle tail-feathers partly or entirely fulvous, finely freckled and vermiculated with dusky;

head and neck more coarsely and regularly barred; chest, breast, sides, and flanks nearly like upper parts. *Fall female:* Similar to male, but more ochraceous, with heavier black markings (?). *Young:* Above light brownish gray, or grayish brown, densely vermiculated with black, and with scattered irregular large spots of the same; two outer quills partly white, four innermost ones entirely white, the rest dull grayish; tail-feathers mottled brownish, like back; anterior and lateral lower parts dull buffy, irregularly barred, vermiculated, and spotted with black; rest of lower parts plain dull grayish buffy white. Length 12.00–13.00, wing 6.50–6.70. *Eggs* 1.68 × 1.15, cream-color or buff, speckled with dark brown and black. *Hab.* Alpine summits of Rocky Mountains, south to New Mexico, north into British America (as far as Fort Halkett, Liard's River), west to higher ranges of Oregon, Washington Territory, and British Columbia.

304. **L. leucurus** SWAINS. **White-tailed Ptarmigan.**

GENUS TYMPANUCHUS GLOGER. (Page 185, pl. LIX., fig. 1.)

Species.

COMMON CHARACTERS.—Above brownish, barred (sometimes spotted also) with dusky and buff; beneath white broadly barred or banded with brown; quills brownish gray, their outer webs spotted with buff or whitish; chin, throat, and cheeks buff, the last marked with a cluster of brown or dusky spots; a dark brown stripe on side of head, from corner of mouth beneath eye and across upper part of ear-coverts; above this a buff stripe, interrupted above the eye. *Adult male:* Sides of neck with an erectile tuft of rather stiff elongated feathers, the longest of which are 2.50 or more in length; tail-feathers without bars or other markings, except the narrow whitish tip. *Adult female:* Neck-tufts rudimentary, the longest feathers not more (usually much less) than 2.00 in length; tail-feathers with numerous distinct bars of light brown or buffy. *Nest* on ground in meadows or other open situations. *Eggs* 8–12, or more, light drab, olive, or dull buffy, usually plain, but sometimes slightly speckled with darker.

a^1. Darker bars of back and rump single, very broad, solid black; brown bars on sides and flanks .30 or more wide, unicolored; wing more than 8.50 in adult male, usually much more than 8.00 in adult female.

  b^1. Scapulars without conspicuous whitish terminal spots; neck-tufts of male composed of more than ten parallel-edged feathers, with obtusely rounded or, sometimes, nearly truncated tips. *Young:* Above, including tail, light brownish, the feathers with conspicuous mesial streaks of white and large blotches of black; outer webs of quills spotted with whitish; top of head rusty brownish, with a median black patch or stripe; a dusky patch on ear-coverts; lower parts buffy whitish, with rather irregular broad bars of grayish brown, these breaking up anteriorly into spots; chest tinged with brownish. *Downy young:* Bright buff-yellow, tinged with lemon-yellow, washed on chest and sides with pale rusty; a narrow streak behind eye, several irregular spots on crown and occiput, stripe across shoulder, and longitudinal blotches down back and rump, black. *Male:* Length about 18.00–19.00, wing 8.60–9.40 (9.04), tail 4.00–4.30 (4.16). *Female:* Length about 17.50, wing 8.60–8.75 (8.65), tail 3.60–4.00 (3.80). *Eggs* 1.69 × 1.28. *Hab.* Prairies of Mississippi Valley, south to Louisiana and Texas, west to middle Kansas, Nebraska, and Dakota, north to Wisconsin, east to Indiana and Kentucky.

(25.) 305. **T. americanus** (Reich.). **Prairie Hen.**

*b*². Scapulars with large and very conspicuous terminal spots of buffy whitish; neck-tufts of adult male composed of not more than ten lanceolate, pointed feathers. *Male:* Wing 8.60, tail 4.00. *Female:* Wing 8.00, tail 3.90. *Hab.* Island of Martha's Vineyard, Massachusetts. (Formerly, also Long Island, New Jersey, eastern Pennsylvania, Virginia, etc., but now apparently extinct except on Martha's Vineyard, and there in danger of extermination.).......... 306. **T. cupido** (Linn.). **Heath Hen.**

*a*². Darker bars of back and rump treble, consisting of a perfectly continuous brown bar enclosed between two narrower black bars; darker bars of sides and flanks .25, or less, wide, bicolored, the broader light brown bar being enclosed between two narrower dusky ones; wing less than 8.50 in adult male, usually much less than 8.00 in adult female.

Neck-tufts of adult male with feathers broad and rounded at tips, as in *T. americanus*. *Male:* Wing 8.20–8.30, tail 4.00–4.20. *Female:* Wing 8.00–8.20, tail 3.50–4.00. *Hab.* Eastern border of Great Plains, from Nebraska (?), southwestern Kansas, southwestern Missouri (?), and western part of Indian Territory to western Texas.

307. **T. pallidicinctus** Ridgw. **Lesser Prairie Hen.**

Genus **PEDIOCÆTES** Baird. (Page 185, pl. LIX., fig. 2.)

Species.

Common Characters.—*Adult male:* Above varied with irregular spotting and barring of black and brownish; wing-coverts with large roundish white spots, and scapulars streaked medially with same; outer webs of quills spotted with white; beneath white, varied with mostly V-shaped marks of dusky, chiefly on anterior and lateral portions. *Adult female:* Similar to male, but somewhat smaller, and with middle tail-feathers shorter. *Young:* Above brownish, spotted and barred with black and conspicuously streaked with white; outer webs of quills spotted with white; lower parts dull whitish, the chest, breast, sides, and flanks spotted with dusky. *Downy young:* Bright buffy yellow, the upper parts tinged with light rusty and coarsely marbled with black; a small black spot on middle of crown, and several larger black markings on occiput and hind-neck, but fore-part of head, all round, immaculate. Length 15.00–19.00, wing 8.50–9.00, tail 4.00–5.50. *Nest* on ground in open situations. *Eggs* about 6–12, or more, varying from olive-buffy to deep brown, often plain, but usually more or less speckled with dark brown.

a^1. Very dark-colored, with black or dusky largely predominating on upper parts, the white scapular streaks and wing-spots showing in strong relief; feathering on legs deep brownish gray. *Eggs* 1.75 × 1.26. *Hab.* Interior of British America, north to Fort Simpson, Fort Resolution, and Great Slave Lake, south to Moose Factory, Temiscamingue, Lake Winnipeg, and northern shore of Lake Superior.................... 308. **P. phasianellus** (LINN.). **Sharp-tailed Grouse.**

a^2. Lighter colored, the general color of upper parts buffy grayish or light brownish of various shades, always predominating over black markings, the white markings on scapulars and wings not conspicuously contrasted with the general color; feathering of feet pale brownish gray.

  b^1. Ground-color above buffy grayish or pale grayish clay-color, with little if any rusty tinge. *Eggs* 1.69 × 1.26. *Hab.* Northwestern United States, south to northern California, Nevada, and Utah, east to western edge of Great Plains in Montana, north, chiefly west of Rocky Mountains (?) to Fort Yukon, Alaska........ 308*a*. **P. phasianellus columbianus** (ORD). **Columbian Sharp-tailed Grouse.**

  b^2. Ground-color above more rusty or ochraceous. *Eggs* 1.67 × 1.24. *Hab.* Great Plains of United States, north to Manitoba (?), east to Wisconsin and northern Illinois, west to eastern Colorado, south to eastern New Mexico............................ 308*b*. **P. phasianellus campestris** RIDGW. **Prairie Sharp-tailed Grouse.**

GENUS CENTROCERCUS SWAINSON. (Page 185, pl. LX., fig. 1.)

Species.

Adult male: Above mixed grayish and buffy, very irregularly varied with black, the tertials bordered terminally with white, and some of the feathers (especially wing-coverts) having mesial streaks of the same; quills brownish gray, sometimes mottled along edges with paler; cheeks, chin, and throat spotted black and white, the former usually predominating (sometimes uniform on first)—this blackish area bordered behind by a more or less distinct white crescent, the extremities of which reach upward to the eyes; fore-neck black, the feathers sometimes bordered or edged with grayish white; below this (on chest) dull grayish or whitish, the feathers with very stiff, wiry black shafts; belly uniform black, the surrounding portions chiefly white; lower tail-coverts black, broadly tipped with white; length about 26.00–30.00, wing 12.00–13.00, tail 11.00–13.00, weight 4½ to 8 lbs. *Adult female:* Similar to male, but much smaller, the chin and throat entirely white, black patch on fore-neck replaced by speckled grayish, etc.; length 21.50–23.00, wing about 10.50–11.00, tail 8.00–9.00. *Young:* Somewhat like adult female, but much browner above, black abdominal area indistinct, and markings of lower parts generally less distinctly defined. *Downy young:* Above brownish gray, coarsely and irregularly marbled with black, these markings most conspicuous on head. *Nest* on ground. *Eggs* 6–17, 2.16 × 1.50, varying from pale olive-buff to light olive-greenish, speckled, sprinkled, or spotted with deep brown. *Hab.* Artemisia or "sage-brush" plains of the Rocky Mountain plateau, north into British America, south to New Mexico, Utah, and Nevada.......... 309. **C. urophasianus** (BONAP.). **Sage Grouse.**

FAMILY PHASIANIDÆ.—THE PHEASANTS, TURKEYS, ETC. (Page 184.)

Genera.

*a*¹. Head feathered, except sometimes on sides (around eyes); tail lengthened, graduated, and vaulted, the feathers usually tapering to a point; plumage of sexes entirely different, the female much smaller than the male, and without brilliant coloring. (Subfamily *Phasianinæ.*)... **Phasianus.** (Page 205.) **(26.)**

*a*². Head naked, the skin wrinkled and warted, the forehead with more or less conspicuous extensile appendage (smaller in females); tail moderately lengthened, rounded, not vaulted, the feathers broad and nearly truncated at tips; plumage of sexes essentially alike, but females duller in color than males. (Subfamily *Meleagrinæ.*)..................................... **Meleagris.** (Page 206.)

GENUS PHASIANUS LINNÆUS.[1] (Page 205.)

Species.

COMMON CHARACTERS.—Form elegant, carriage graceful, and plumage handsome (that of the male exquisite). *Adult males:* Adorned with rich metallic colors, variegated by handsome markings or pencillings. *Adult females:* Brownish, more or less mottled, spotted, and otherwise varied with dusky, the lower parts, however, chiefly plain buffy brownish.

*a*¹. *Adult males* with neck metallic greenish or bluish; sides of occiput with a more or less conspicuous tuft of elongated feathers. *Adult females* with all the tail-feathers barred, for their whole length, with blackish and whitish on a mottled brownish ground.

  *b*¹. *Adult males* with breast (sometimes sides and flanks also) rich coppery chestnut, with metallic purple and coppery reflections.

    *c*¹. *Adult male* without white on neck; length about 2½ feet, wing 9.50–10.50 inches, tail 17.50–20.00. *Adult female:* Length about 20.00–24.00, wing 8.50, tail 11.00–12.00. *Young male:* Similar to adult female. *Downy young:* "Sides of head, throat, and under parts, yellowish white; forehead dull rusty yellowish, with a dark brown central stripe, which broadens towards the nape; behind the ear is a black spot; upper parts generally yellowish, variegated with rusty red and brown, and with blackish brown stripes." (DRESSER.) *Hab.*

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[1] *Phasianus* LINN., S. N. ed. 10, i. 1758, 158. Type, *P. colchicus* LINN.

Europe in general, except colder portions; introduced into (and naturalized in?) eastern United States. (Introduced into Europe from western Asia.)

P. colchicus Linn. **Pheasant.**[1]

*c*². *Adult* male with white collar round neck, much narrower (sometimes interrupted) before and behind; otherwise closely resembling *P. colchicus*. *Hab.* China. (Introduced into and partially naturalized in western Oregon?)

P. torquatus Gmel. **Ring-necked Pheasant.**[2]

*b*². *Adult male* with breast, sides, and flanks rich dark green.

Length about 24.00–27.00, wing 9.60, tail 16.00. *Adult female* very similar to same sex of *P. colchicus* and *P. torquatus*, but tail more numerously barred and with more reddish or purplish ground-color; length about 20.00, wing 8.25, tail 10.50. *Hab.* Japan; introduced into and naturalized in western Oregon.

P. versicolor Vieill. **Green Pheasant.**[3]

*a*². *Adult male* with neck rich chestnut, with coppery red and purplish reflections; sides of occiput without tufts. *Adult female* with tail (except four middle feathers) uniform chestnut, tipped with white, this immediately preceded by a subterminal black bar.

Adult male: General color chestnut and rufous, glossed with coppery red and purplish, the rump broadly streaked with white; tail light rufous, crossed at wide intervals by broad bands of deep chestnut, each of these preceded by a black bar, this again by mottled whitish; length about 36.00, wing 9.00, tail 28.00. *Female:* Length about 18.00–20.00, wing 8.25, tail 8.50. *Hab.* Japan; introduced into and naturalized in western Oregon.

(27.) **P. sœmmerringii** Temm. **Copper Pheasant.**[4]

Genus **MELEAGRIS** Linnæus. (Page 205, pl. LXI., fig. 1.)

Species.

Common Characters.—Quills slaty, barred with white; secondaries similar, but with more white; tail brown or gray, barred with black; plumage in general more or less brilliantly metallic. *Nest* on ground in woods. *Eggs* 10–18, or more, light buffy, thickly (but sometimes indistinctly) speckled or sprinkled with brown.

*a*¹. Tail and its coverts tipped with chestnut, rusty, or whitish; ground-color of tail brown; feathers of lower back, rump, and lower parts metallic, tipped narrowly with velvety black; greater wing-coverts dull copper-color, tipped with velvety black. *Adult males* with a conspicuous beard-like tuft of stiff coarse black bristles depending from centre of chest, and with leg-spur shorter than hind-toe, conical, and blunt. *Adult male:* Length about 48.00–50.00, wing 21.00, tail 18.50, weight 16–40 pounds. *Adult female* considerably smaller (average weight about 12 pounds), the colors duller.

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[1] *Phasianus colchicus* Linn., S. N. ed. 10, 1758, 158.

[2] *Phasianus torquatus* Gmel., S. N. i. 1788, 742.

[3] *Phasianus versicolor* Vieill., Gal. Ois. ii. 1834, 23, pl. 205.

[4] *Phasianus sœmmerringii* Temm., Pl. Col. v. 1838, 82 livr. pls. 487, 488.

b^1. Tail tipped with deep rusty, its coverts and feathers of lower rump tipped with rich dark chestnut. *Eggs* 2.42 × 1.83. *Hab.* Eastern United States, north to southern Canada, south to Florida and eastern Texas, west to edge of Great Plains.

(28.) 310. **M. gallopavo** (Linn.). **Wild Turkey.**

b^2. Tail, tail-coverts, and feathers of lower rump tipped with buffy whitish. *Eggs* 2.71 × 1.92. *Hab.* Table-lands of Mexico, and north to southern border of United States (western Texas to Arizona); south to Vera Cruz (temperate region).

(29.) 310*a*. **M. gallopavo mexicana** (Gould). **Mexican Turkey.**

a^2. Tail and its coverts tipped with intensely brilliant metallic copper-bronze; ground-color of tail ash-gray; feathers of lower back and rump rich steel-blue, those of lower parts bronzy black—all tipped with intensely rich metallic golden and coppery bronze; greater wing-coverts brilliantly metallic copper-bronze; without black tips. *Adult male* without beard-like tuft on chest, and with leg-spur longer (in older birds much longer) than hind-toe, thorn-shaped and very sharp. Size considerably less than in the more northern species. *Hab.* Yucatan and adjacent portions of Honduras (and Guatemala?).

M. ocellata Temm. **Ocellated Turkey.**[1]

Family **CRACIDÆ**.—The Curassows and Guans. (Page 184.)

Genera.

a^1. Cere wholly naked, the nostrils exposed; tarsi entirely naked. (Subfamily *Cracinæ*.)

b^1. Bill very stout, its depth through base equal to or greater than chord of culmen, the top of the cere elevated, distinctly arched; feathers of crest recurved at tips; throat mostly feathered. (Very large: length 2½ to 3 feet.) .... *Crax.*[2]

b^2. Bill much weaker, its depth through base less than chord of culmen, the top of cere not distinctly elevated nor arched; feathers of crest (if any) not recurved at tip; throat naked, except a median narrow strip.

c^1. Larger (length about 2½ to 3 feet); throat with a more or less distinct median "dewlap."

d^1. Sexes alike in color, brownish above, striped with whitish beneath .... *Penelope.*[3]

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[1] *Meleagris ocellata* Temm., Pl. Col. livr. 19, 1838, pl. 112.

[2] *Crax* Linn., S. N. ed. 10, i. 1758, 157. Type, *C. rubra* Linn., = *C. globicera* Linn. et Auct.

[3] *Penelope* Merrem, Aves Icon. et Descr. ii. 1786, 40. Type, *Meleagris cristata* Linn.

d^2. Sexes unlike in color; *male* uniform black, *female* black, vermiculated or irregularly barred with rufous .... *Penelopina.*[1]

c^2. Smaller (length less than 2 feet); throat without median "dewlap"; plumage plain, the tail with whitish or rufous tip. **Ortalis.** (Page 208.)

a^2. Cere densely covered with erect velvet-like feathers, concealing the nostrils; upper part of tarsi feathered in front and on sides. (Subfamily *Oreophasinæ.*) *Male* with a tubercular vertical horn on top of head................ *Oreophasis.*[2]

GENUS **ORTALIS** MERREM. (Page 208, pl. LXI., fig. 2.)

Species.

COMMON CHARACTERS (of Mexican and Central American species).—Above plain olive-brownish or olive-grayish, the tail darker and with a distinct greenish or bluish gloss; anterior lower parts colored like upper surface, the rest of lower parts different (chestnut-rufous, light brownish, or dull whitish).

a^1. Head with a conspicuous crest, the anterior feathers of which incline forward, over base of bill; posterior lower parts and tips of tail-feathers chestnut-rufous; length about 2 feet (or more), wing 9.50–10.50, tail 11.00–12.00. *Hab.* Western Mexico, north to Sonora.

O. wagleri GRAY. **Wagler's Chachalaca.**[3]

a^2. Head not conspicuously crested, all the feathers reclining backward; posterior lower parts and tips of tail-feathers pale brownish, light ochraceous, or whitish.

b^1. Quills olive, or olive-grayish.

c^1. Wing not more than 8.50; feathers of neck blended; under tail-coverts isabella-color, or buffy brownish; tip of tail varying from isabella-color to white.

d^1. Belly dull light brownish or else pure white.

e^1. Tip of tail white.

f^1. Belly pure white; length about 16.50, wing 7.30, tail 8.00. *Hab.* West coast of Guatemala and Nicaragua.

O. leucogastra (GOULD). **White-bellied Chachalaca.**[4]

f^2. Belly dull fulvous-brown, or isabella-color. *Adult:* Above plain grayish olive, faintly glossed with bronzy greenish, more dull slaty on head and neck; tail dusky bronzy greenish, changing to dull bluish, broadly tipped with white, except middle feathers; middle line of throat blackish; lower parts generally dull brownish, somewhat paler on middle of belly, but deepening into more decided, or more fulvous, brownish on flanks and under tail-coverts; length 19.75–24.00, wing 7.50–8.50, tail 9.00–10.50. *Nest* in trees or bushes, usually 4–10 feet from ground, carelessly constructed of sticks, grasses, leaves, etc. *Eggs* 3–4, 2.30 × 1.63, creamy white, with very hard, distinctly granulated shells. *Hab.* Northeastern Mexico, from Vera Cruz north to lower Rio Grande Valley (both sides).

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[1] *Penelopina* REICH., Tauben. 1862, 152. Type, *Penelope nigra* FRAS.

[2] *Oreophasis* GRAY, Gen. B. iii. 1844, 485. Type, *O. derbianus* GRAY.

[3] *Ortalida wagleri* GRAY, List Gallin. Brit. Mus. 1867, 11.

[4] *Penelope leucogaster* GOULD, P. Z. S. 1843, 105. *Ortalida leucogastra* GRAY, List Gallin. Brit. Mus. 1867, 13.

311. **O. vetula maccalli** (Baird). **Chachalaca.**[1]

*e*². Tip of tail dull buffy brown, or isabella-color; colors generally darker than in *maccalli*, and size decidedly less (length about 21.00, wing 7.70, tail 9.00). *Hab.* Guatemala and southern Mexico (Isthmus of Tehuantepec).

O. vetula plumbeiceps Gray. **Guatemalan Chachalaca.**[2]

*d*². Belly dull whitish.

Tip of tail brownish white; otherwise like *maccalli*, but smaller (size of *plumbeiceps*). *Hab.* Yucatan.

O. vetula pallidiventris Ridgw. (subsp. nov.). **Yucatan Chachalaca.**

*c*². Wing 9.00, or more; feathers of neck distinctly lanceolate; under tail-coverts deep ochraceous, tip of tail pale ochraceous.

O. poliocephala Wagl. **Gray-necked Chachalaca.**[3]

*b*². Quills chestnut.

Otherwise very similar to *O. plumbeiceps*, but much browner above.

O. cinereiceps Gray. **Costa Rican Chachalaca.**[4]

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[1] It is possible that this may be the true *O. vetula* of Wagler (*Penelope vetula* Wagl., Isis, 1830, 1112), which seems to agree exactly in color with *O. maccalli*; but the size is much smaller, the length being given as 18 inches, the tail 9.70. The locality is given as simply "Mexico," and it may be that a fourth local race, to which Wagler's name is strictly applicable, may exist in some portion of Mexico specimens from which have not come under my observation.

[2] *Ortalida plumbeiceps* Gray, List Gallin. Brit. Mus. 1867, 11.

[3] *Penelope poliocephala* Wagl., Isis, 1830, 1112. *Ortalida poliocephala* Wagl., Isis, 1832, 1227.

[4] *Ortalida cinereiceps* Gray, List Gallin. Brit. Mus. 1867, 12.

ORDER **COLUMBÆ.**—THE PIGEONS. (Page 2.)

Families.

(Characters same as those given for the Order) .. **Columbidæ.** (Page 210.)

FAMILY **COLUMBIDÆ.**—THE PIGEONS OR DOVES. (Page 210.)

(*Nest* a flat frail platform of sticks, straws, etc., usually in trees. *Eggs* 2, plain white or buffy white.)

Genera.

- *a*¹. Tarsus shorter than lateral toes. (Subfamily *Columbinæ.*)
  - *b*¹. Tail much shorter than wing, slightly rounded, the feathers broad and rounded, or nearly truncated, at tips.............. **Columba.** (Page 211.)
  - *b*². Tail nearly as long as wing, graduated, the feathers narrow and pointed at tips.. **Ectopistes.** (Page 212.)
- *a*². Tarsus longer than lateral toes. (Subfamily *Zenaidinæ.*)
  - *b*¹. Front of tarsus covered by transverse scutellæ.
    - *c*¹. Wing more than 5.00.
      - *d*¹. Terminal portion of outer quill abruptly narrowed. **Leptotila.** (Page 214.)
      - *d*². Terminal portion of outer quill not narrowed.
        - *e*¹. Outer webs of only second and third quills very slightly sinuated (sinuation scarcely perceptible).
          - *f*¹. Tail-feathers 12; tail rounded, less than three-fourths as long as wing, the feathers broad and rounded at tips.
            - *g*¹. Culmen longer than lateral toes, without claws; tail nearly three-fourths as long as wing; a white patch covering larger wing-coverts. **Melopelia.** (Page 214.)
            - *g*². Culmen shorter than lateral toes, without claws; tail barely more than two-thirds as long as wing; no white patch on wing-coverts. **Zenaida.** (Page 213.)
          - *f*². Tail-feathers 14; tail graduated, usually more than three-fourths (always more than two-thirds) as long as wing, the feathers more or less narrowed at tips. **Zenaidura.** (Page 212.)
        - *e*². Outer webs of second to fifth quills, inclusive, distinctly sinuated; tail less than two-thirds as long as wing. **Geotrygon.** (Page 216.)

c^2. Wing less than 4.00.

d^1. Tail as long as or longer than wing, lateral feathers graduated and narrowed at tips.......................... **Scardafella.** (Page 215.)

d^2. Tail much shorter than wing, rounded, the feathers broad at ends. **Columbigallina.** (Page 214.)

b^2. Front of tarsus covered with hexagonal scutellæ.

Otherwise like *Geotrygon*, but tarsi decidedly longer than middle toe, with claw.. **Starnœnas.** (Page 217.)

GENUS **COLUMBA** LINNÆUS. (Page 210, pl. LXII., figs. 1, 2.)

Species.

a^1. Terminal third of tail abruptly lighter in color than the basal portion, the two shades (of grayish) separated by a blackish band; lower tail-coverts white.

Above plumbeous, browner on back, more bluish on rump, the wing-coverts paler and narrowly edged with white; quills dusky. *Adult male:* A narrow half-collar of white across upper portion of hind-neck, the rest of the hind-neck dull metallic bronzy green; head, fore-neck, and lower parts more or less purplish, or glaucous-vinaceous, or violet, becoming more pinkish on belly and plumbeous on sides; bill yellow (in life) with black tip. *Adult female:* Similar to the male, but usually much duller in color, the white nuchal bar indistinct or even obsolete, the breast grayer, belly whitish, hind neck less metallic, and size rather less. *Young:* Somewhat like adult female, but feathers of upper parts narrowly and rather indistinctly margined with paler; head and neck dull plumbeous (in male) or light grayish brown (in female), with indistinct paler tips to feathers; no trace of white bar on nape, and lower parts dull grayish, tinged with brown on breast. Length 15.00–16.00, wing 8.00–8.80, tail 6.00–6.50. *Hab.* Western United States, from Rocky Mountains to the Pacific coast, and south through Mexico to

(30.) highlands of Guatemala...... 312. **C. fasciata** SAY. **Band-tailed Pigeon.**

a^2. Tail of a uniform shade throughout; lower tail-coverts slate-gray.

b^1. Neck same color all round, and entirely destitute of metallic gloss. *Adult male:* Head, neck, and breast purplish chocolate, or vinaceous-chestnut, the lesser and upper middle wing-coverts similar, but brighter, or less vinaceous; back, scapulars, and tertials grayish brown or olivaceous; rest of plumage dark plumbeous or slaty, clearest on rump and flanks, paler on under wing-coverts, darker on tail. *Adult female:* Similar, but rather smaller and color duller. Length 13.75–14.60, wing about 7.50–7.80, tail 5.40–5.50. *Eggs* 1.47 × 1.06. *Hab.* Mexico and Central America, south to Costa Rica, north to southern Texas and Lower California.
313. **C. flavirostris** WAGL. **Red-billed Pigeon.**

b^2. Hind-neck ornamented by a "cape" of metallic brassy or bronzy green or purplish, each feather distinctly bordered with velvety black. *Adult (sexes alike):* Entire top of head white or pale grayish buffy; upper part of hind-neck dark maroon; rest of plumage uniform dark plumbeous; length 12.00–14.25, wing 7.00–7.80, tail 5.50–5.80. *Eggs* 1.46 × 1.04. *Hab.* Greater Antilles, Bahamas, and Florida Keys; also, Santa Cruz, St. Bartholomew, and coast of Honduras.

314. **C. leucocephala** LINN. **White-crowned Pigeon.**

GENUS **ECTOPISTES** SWAINSON. (Page 210, pl. LXIII., fig. 1.)

Species.

Tail shading from dusky on middle feathers, through gradually lighter shades of gray, to white on outer webs of lateral pair, the inner web of each feather (except middle pair) with a transverse blackish spot preceded by one of rufous. *Adult male:* Head, neck, rump, and under wing-coverts uniform plumbeous; other upper parts grayish brown, or drab, the outermost scapulars, innermost wing-coverts, and tertials spotted with black; nape and sides of neck glossed with changeable metallic reddish purple; chest and breast deep vinaceous-rufous, passing gradually into soft pinkish vinaceous on sides; belly and under tail-coverts white. *Adult female:* Similar to the male, but head brownish gray, gradually paler toward throat; chest and breast grayish brown, or drab, gradually changing to pale brownish gray on sides; metallic gloss on neck less distinct; size somewhat less. *Young:* Somewhat like adult female, but wing-coverts and scapulars, also feathers of head, neck, and chest narrowly tipped with whitish, producing a mottled appearance; rusty margins to quills more distinct, and bordering their tips. Length 15.00–17.25, wing 8.00–8.50, tail 8.20–8.75, the female somewhat smaller. *Eggs* 1.48 × 1.04. *Hab.* Deciduous forest-region of eastern North America, west, casually, to Washington Territory and Nevada; Cuba.

315. **E. migratorius** (LINN.). **Passenger Pigeon.**

GENUS **ZENAIDURA** BONAPARTE. (Page 210, pl. LXIII., fig. 2.)

Species.

COMMON CHARACTERS (of North and Middle American species).—Tail-feathers (except middle pair) grayish, paler at tips, and crossed by an irregular subterminal band of dusky; upper parts plain brownish, the tertials, with adjacent wing-coverts or scapulars, or both, marked with a few roundish, oval, or oblong spots of black; axillars and under wing-coverts bluish gray, or plumbeous.

*a*¹. Secondaries not tipped with white.

*b*¹. Lower tail-coverts light creamy buff. *Adult male:* Occiput light bluish gray, with a glaucous "bloom"; rest of head and neck vinaceous-cinnamon, paler on throat and forehead, the chin whitish; sides of neck glossed with changeable metallic purple; a spot of blue-black beneath ears; chest and breast delicate vinaceous, changing to creamy buff posteriorly, paler on lower tail-coverts. *Adult female:* Similar to the male, but head light drab, paler on throat, and whitish on chin, the occiput scarcely if at all bluish; breast light drab, or grayish olive-brown, changing to pale buffy on posterior lower parts; metallic gloss on neck less distinct, the black ear-spot smaller and duller. *Young:* Much duller in color than adult female, with the tints more brownish; feathers of upper parts, head, neck, and chest, with distinct paler tips or terminal margins; no metallic gloss on neck, or distinct black spot beneath ears. Length 11.00–13.00, wing 5.70–6.10, tail 5.70–6.50, culmen .50–.55. *Nest* variously situated; *Eggs* 1.10 × .82. *Hab.* Whole of temperate North America, north to Canada, southern Maine, etc., south to Panama and West Indies.......................... 316. **Z. macroura** (Linn.). **Mourning Dove.**

b^2. Lower tail-coverts cinnamon-color. *Young (adult unknown):* Much darker in color than *Z. macroura*, the entire lower parts, including under tail-coverts, uniform deep rusty cinnamon. Wing about 6.00, tail 4.80–5.00, culmen .80. *Hab.* Socorro Island, western Mexico.
Z. graysoni Lawr. **Socorro Dove.**[1]

a^2. Outer webs of secondaries broadly tipped with white.
Adult male (female and young unknown): Entire lower parts uniform deep vinaceous, somewhat paler on lower tail-coverts. (Plumage exactly that of paler-colored specimens of *Zenaida amabilis.*) Wing 6.00, tail 4.80. *Hab.* Yucatan (Merida).
Z. yucatanensis Lawr. **Yucatan Dove.**[2]

Genus ZENAIDA Bonaparte. (Page 210, pl. LXIII., fig. 3.)

Species.

Common Characters.—Above olive-brown or russet, the tertials and adjacent wing-coverts or scapulars spotted with black; head, neck, and breast cinnamon-color, relieved by a spot or streak of blue-black beneath ear-coverts and reflections of changeable metallic purple on sides of neck; tail-feathers (except middle pair) plumbeous or slaty, broadly tipped with a lighter shade of the same, and crossed by a subterminal band of black; outer webs of secondaries broadly tipped with white.

a^1. Under tail-coverts deep cinnamon; head and neck purplish cinnamon or deep vinaceous; length 10.00–11.50, wing 6.00–6.25, tail 4.00–4.40. *Eggs* 1.22 × .92. *Hab.* Florida Keys, Bahamas, Cuba, Jamaica, Porto Rico, Santa Cruz, Sombrero, and coast of Yucatan.. 317. **Z. zenaida** (Bonap.). **Zenaida Dove.**

a^2. Under tail-coverts whitish, usually slightly tinged with vinaceous or grayish; head and neck (especially the latter) cinnamon-rufous; a little larger than *Z. zenaida*. *Hab.* Lesser Antilles (St. Bartholomew, St. Vincent, Barbuda, Antigua, Guadeloupe, Dominica, Martinique, Grenada, St. Eustatius, etc.).
Z. castanea (Wagl.). **Antillean Dove.**[3]

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[1] *Zenaidura graysoni* Lawr., Ann. Lyc. N. Y. 1871, 17.

[2] *Zenaidura yucatanensis* Lawr., Ann. Lyc. N. Y. ix. 1869, 208. (Perhaps a hybrid between *Z. macroura* and *Zenaida amabilis.*)

[3] *Columba castanea* Wagl., Syst. Av. 1827, 289, Columba, Sp. 77. (*Z. martinicana* Bp. *et* Auct., but not *Columba martinica* Linn.)

GENUS **LEPTOTILA** SWAINS. (Page 210, pl. LXII., fig. 3.)

Species.

Adult male: Above plain olive-brownish, the occiput, hind-neck, and sides of neck glossed with metallic reddish purple; top of head bluish gray, fading into creamy white on forehead; rest of head and neck, with lower parts, pale vinaceous, or vinaceous-white, deeper on chest and upper part of breast, the chin, belly, and under tail-coverts pure white, the sides tinged with grayish brown or olive; axillars and under wing-coverts chestnut-rufous; middle tail-feathers like back, the rest slaty black, broadly tipped with white. *Adult female:* Similar to the male, but colors duller, with vinaceous tints less pronounced, and metallic gloss on hind-neck less distinct. Length about 11.50–12.50, wings 6.00–6.50, tail 4.25–4.50. *Nest* in vines or bushes. *Eggs* 1.17 × .87, dull buffy white. *Hab.* Mexico and Guatemala, north to lower Rio Grande Valley in Texas.

318. **L. fulviventris brachyptera** (SALVAD.). **White-fronted Dove.**

GENUS **MELOPELIA** BONAPARTE. (Page 210, pl. LXIV., fig. 3.)

Species.

Two middle tail-feathers grayish brown, the rest plumbeous or slaty, with the terminal fourth white (tinged with gray toward middle feathers), the plumbeous or slate of basal portion darker next to the lighter terminal portion; secondaries broadly edged terminally with white; larger wing-coverts white, producing a large white longitudinal patch on wing. *Adult male:* Above grayish brown or drab, grayer on wings, more plumbeous on rump; head, neck, and chest light brownish gray, more or less tinged with pale vinaceous, the occiput and hind-neck inclining to glaucous lilaceous; sides of neck glossed with metallic golden green changing to purple; a spot of blue-black immediately beneath ear-coverts; other lower parts light pearl-gray, becoming whitish on lower tail-coverts. *Adult female:* Similar to the male, but colors duller, with little if any lilaceous or vinaceous tinge to chest, etc. *Young:* Similar to adult female, but colors still duller, the feathers of upper parts with paler terminal margins, and the chest with a faint rusty tinge. Length 11.00–12.25, wing 6.30–6.80, tail 4.80–5.25. *Nest* in bushes or low trees. *Eggs* 1.20 × .90, very light creamy buff or buffy white. *Hab.* Mexico and Central America, south to Costa Rica, north to southern border of United States (Texas to Arizona and Lower California); Cuba; Jamaica.

319. **M. leucoptera** (LINN.). **White-winged Dove.**

GENUS **COLUMBIGALLINA** BOIE. (Page 211, pl. LXII., fig. 4.)

Species.

COMMON CHARACTERS.—*Adult males* with top of head bluish gray, or tinged with this color; rest of upper parts plain grayish brown or chestnut, the uppermost wing-coverts (sometimes scapulars also) more or less marked with steel-blue or black;

inner webs of quills rufous; tail (except middle feathers) blackish; lower parts chiefly vinaceous. *Adult females* much duller, the lower parts dull light vinaceous-grayish, or light brownish.

*a*¹. Axillars and under wing-coverts chestnut-rufous.

Adult male: Head, neck, and lower parts pinkish vinaceous, the feathers (31.) of the breast dusky grayish brown centrally, and those of head and neck margined with a darker shade of the ground-color; occiput and nape bluish gray, or glaucous; upper parts in general plain grayish brown, the innermost wing-coverts (which are often vinaceous, like lower parts) marked with small spots of dark metallic violet. *Adult female:* Similar to male, but colors much duller, the vinaceous replaced by light brownish gray (sometimes slightly vinaceous). *Young:* Somewhat like adult female, but still duller, or more grayish, the feathers, especially of upper parts, narrowly margined terminally with whitish. Length 6.00–7.00, wing 3.10–3.60, tail 2.60–2.80, exposed culmen, .41–.48, tarsus .60–.66. *Eggs* .85 × .65. *Hab.* Southern Atlantic and Gulf States, from Florida to South Carolina (casually to District of Columbia), and Louisiana.

320. **C. passerina terrestris** Chapm. **Ground Dove.**

*a*². Axillars and most of under wing-coverts black.

Adult male: Above vinaceous-chestnut, becoming bluish gray on top of head, and light vinaceous on forehead; lower parts plain deep vinaceous, paler on chin. *Adult female:* Above dull brownish, sometimes tinged with rusty; lower parts plain grayish brown, or brownish gray. Wing about 3.50–3.70. *Hab.* Middle America and northern South America, north to Orizaba and Colima, Mexico.

C. rufipennis (Bonap.). **Rufous Ground Dove.**[1]

GENUS SCARDAFELLA BONAPARTE. (Page 211, pl. LXII., fig. 5.)

Species.

Common Characters.—Grayish brown above, each feather with a terminal border or crescentic bar of dusky; inner web of quills, except terminal portion, rufous; under wing-coverts partly black; lower parts pale grayish vinaceous, passing into white or buff posteriorly, marked like upper parts; lateral tail-feathers with terminal half white, the rest black.

*a*¹. Larger wing-coverts, belly, and lower tail-coverts white; breast distinctly squamated with dusky; wing about 4.00, tail 4.00. *Hab.* South America (Brazil, Venezuela, eastern Ecuador, etc.).

S. squamosa (Temm.). **Scaled Dove.**[2]

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[1] *Talpacotia rufipennis* Bonap., Consp. ii. 1854, 79.

[2] *Columba squamosa* Temm., Pig. et Gal. i. 1811, pl. 59. *Scardafella squamosa* Bonap., Consp. ii. 1854, 85.

*a*². Larger wing-coverts pale brownish gray, like rest of coverts; belly and lower tail-coverts buff; breast very indistinctly squamated; wing 3.75 or less, tail more than 4.00.

Adult: Lower parts pale grayish vinaceous anteriorly (nearly white on chin), passing into buff on belly, flanks, and lower tail-coverts; chin, throat, and upper part of chest immaculate, but feathers of other portions tipped with blackish, these bars broadest on flanks; upper parts, including all the wing-coverts, grayish brown, each feather tipped with a crescentic bar of blackish. *Young:* Similar to adult, but less pinkish beneath, and grayish brown of upper parts somewhat mottled by occasional whitish tips to feathers. Length about 8.00, wing 3.70–3.75, tail 4.00–4.40. *Eggs* .83 × .65. *Hab.* Mexico and Guatemala, north to southern border of United States (southern Texas to southern Arizona.) 321. **S. inca** (Less.). **Inca Dove.**

Genus GEOTRYGON Gosse. (Page 210, pl. LXIV., fig. 2.)

Species.

Common Characters.—Upper parts mainly uniform chestnut, the back (sometimes other portions also) with more or less of metallic gloss; lower parts plain dull whitish, ochraceous or buffy, deepening into brownish or vinaceous on chest.

*a*¹. Quills rufous, on both webs, in adult (partly rufous in young); feathers of neck blended.

*b*¹. Belly and under tail-coverts whitish, or very pale buffy; back brilliantly metallic.

Adult: Forehead and lores dull chestnut; rest of upper head with hind-neck dull metallic bronzy green, changing to purplish; back brilliantly metallic reddish purple; rest of upper parts mainly dull chestnut, more or less glossed with metallic purple, especially on rump and lesser wing-coverts; a broad whitish malar stripe, extending back to occiput, across ear-coverts; beneath this a narrower and less distinct stripe of brown or chestnut; anterior lower parts pale vinaceous, becoming whitish on chin and throat; posterior lower parts dull white, or very pale buffy; length 10.60–11.75, wing 6.00–6.50, tail 4.20–5.75. *Hab.* Haiti, Cuba, Bahamas, and Florida Keys. 322. **G. chrysia** Bonap.[1] **Key West Quail-dove.**

*b*². Belly and under tail-coverts deep ochraceous; back not brilliantly metallic.

Adult: Above deep purplish chestnut, with metallic reflections (of purplish red) only in certain lights; chin and throat buffy whitish; bordered along each side by a dark purplish chestnut stripe, with a buffy malar stripe above it—neither very sharply defined; fore-neck and chest vinaceous or vinaceous-brown; rest of lower parts deep ochraceous-buff or ochraceous. *Young:* Above deep sepia-brown (with an olive cast in some lights), the wing-coverts sometimes mixed with rusty; forehead, chest, etc., dull cinnamon-brown; rest of under parts brownish buffy; quills mainly dusky, but inner webs broadly edged with rufous, especially toward base. Wing 5.30–6.00, tail 3.10–3.60. *Hab.* Tropical America in general (including West Indies), north to Cuba and eastern Mexico (Mirador); accidental at Key West, Florida.

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[1] *Geotrygon chrysia* Bonap., Consp. ii. 1854, 72.

[322.1.] **G. montana** (Linn.). **Ruddy Quail-dove.**[1]

*a*². Quills entirely dusky, on both webs; feathers of neck very distinctly outlined. *Adult:* Top of head slaty or plumbeous, becoming paler (sometimes whitish or pale vinaceous) on forehead; hind-neck dull greenish bronze; rest of upper parts nearly uniform dark chestnut, slightly glossed with violet-purple on back; chin and throat pale buffy or buffy whitish; chest varying from dull brownish to buffy vinaceous or even grayish brown; rest of lower parts buffy, deeper on sides and flanks; length (skin) about 9.50–11.00, wing 5.80–6.20, tail 3.50–4.40. *Hab.* Guatemala and southern Mexico, north to Mirador.

G. albifacies Scl. **Mexican Quail-dove.**[2]

Genus STARNŒNAS Bonaparte. (Page 211, pl. LXIV., fig. 1.)

Species.

Adult: General color plain olive-brown above and dull rusty beneath, the breast sometimes with a glaucous-purplish tinge; top of head dull cobalt-blue, bordered below by black; a wide white stripe running from chin beneath eye to occiput; throat and chest black, bordered below by a semicircular line of pure white, the feathers of the upper and lateral portions of the black area tipped with blue; length 10.75–12.50, wing 5.40–5.70, tail 4.00–4.25. *Hab.* Cuba and Florida Keys.......................... 323. **S. cyanocephala** (Linn.). **Blue-headed Quail-dove.**

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[1] *Columba montana* Linn., S. N. ed. 10, i. 1758, 163. *Geotrygon montana* Bonap., Consp. ii. 1854, 72.

[2] *Geotrygon albifacies* Scl., P. Z. S., 1858, 98.

ORDER **RAPTORES.**—BIRDS OF PREY. (Page 2.)

Families.

a^1. Head entirely naked, or else only partially covered with down (in young); nostrils longitudinal; a distinct web between inner and middle toes, at base; hind-toe short, elevated, the feet wholly unfit for grasping. (Suborder *Sarcorhamphi.*)... **Cathartidæ.** (Page 218.)

a^2. Head entirely feathered or only partially naked; nostrils vertical or roundish; no web between inner and middle toes; hind-toe well developed, with large, sharp claw, inserted at the same level with anterior toes, the feet specially adapted for grasping.

b^1. Eyes lateral, not surrounded by disks of radiating feathers; cere exposed; outer toe not reversible (except in *Pandion*). (Suborder *Falcones.*) **Falconidæ.** (Page 222.)

b^2. Eyes directed forward, surrounded by disks of radiating feathers; cere concealed by loral and frontal bristle-like feathers; outer toe reversible. (Suborder *Striges.*)

c^1. Inner toe as long as middle toe; inner edge of middle claw pectinated; feathers on hinder part of tarsus recurved, or pointed upward; first quill longer than third, none of the quills with inner webs sinuated or emarginated.................................... **Strigidæ.** (Page 255.)

c^2. Inner toe decidedly shorter than middle toe; inner edge of middle claw not pectinated; feathers on hinder part of tarsus (if present) pointed downward; first quill shorter than third, and at least one (one to six) quill with inner web sinuated or emarginated. **Bubonidæ.** (Page 255.)

FAMILY **CATHARTIDÆ.**—THE AMERICAN VULTURES. (Page 218.)

Genera.

a^1. Cere decidedly shorter than the upper mandible; bill very strong, with all its outlines decidedly convex. *Adult males* with a fleshy "comb" or lobe surmounting the top of the cere.

b^1. Plumage of adult commencing on the neck with a very distinct collar of white cottony down; primaries decidedly longer than secondaries; throat with a median "dewlap"; "comb" of adult male extending from near anterior border of cere to middle of the crown; sexes very different, the female lacking entirely the "comb" or other fleshy appendages to the head; very large (wing 30.00, or more)................ *Sarcorhamphus.*[1]

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[1] *Sarcorhamphus* DUMÉRIL, Zool. Anal. 1806, 32. Type, by elimination, *Vultur gryphus* LINN.

b^2. Plumage commencing on neck with broad, normally developed feathers; primaries not longer than secondaries; throat without any "dewlap"; "comb" of adult male attached only to middle of cere, above nostril; sexes alike; size medium (wing less than 25.00).

Gypagus. (Page 219.)

a^2. Cere decidedly longer than upper mandible; bill comparatively weak. *Adult males* without fleshy "comb" or lobe surmounting cere.

b^1. Entire neck bare of feathers; plumage commencing abruptly with lanceolate or penicillate feathers, these continued over breast and belly; head much elongated, the upper outline of the cere elevated posteriorly above the level of the flattened forehead; very large (wing 30.00, or more).

Nostril very small, occupying not more than the basal third of the nasal fossæ, its anterior end acute; bill small, the mandibles decidedly broader than deep, the lower as deep as the upper; skin of head and neck smooth; tail even.... **Pseudogryphus.** (Page 220.)

b^2. Head only, or with only upper part of neck, naked; plumage commencing gradually on upper part or middle of neck with broad, normal feathers, those of the breast and belly broad and blended; forehead elevated above the upper outline of cere; bill stronger, with hook of upper mandible well developed; much smaller (wing less than 25.00).

c^1. Nostrils very large and broad, occupying the whole of the nasal fossæ, both ends broadly rounded; wing lengthened, the quills reaching to or beyond tip of the much rounded tail... **Cathartes.** (Page 220.)

c^2. Nostrils small and narrow, occupying only the posterior half of the nasal fossæ, the anterior end pointed; wing short, rounded, the quills scarcely reaching to the middle of the even or slightly emarginated tail.. **Catharista.** (Page 221.)

GENUS **GYPAGUS** VIEILLOT. (Page 219, pl. LXIV., fig. 5.)

Species.

Adult: Upper neck ("ruff") plumbeous, the feathers white at base; tertials, secondaries, quills, greater and primary coverts, rump, upper tail-coverts, and tail, black, the secondaries grayish exteriorly and edged with white; rest of plumage deep vinaceous-buff or pinkish cream-color above, white beneath; naked skin of head and upper neck very brilliantly colored in life with yellow, orange, red, blue, etc.; iris white; bill dull red in dried skins, said to be orange and black in life. *Young:* Entirely plain blackish brown, the bill and naked skin of head dusky. Length 27.00–34.00, wing 19.00–20.00, tail 9.50–10.00, culmen 1.30–1.40, tarsus 3.60–3.65, middle toe 3.00–3.30. *Eggs* 3.70 × 2.65, plain white. *Hab.* Whole of tropical America, except West Indies, north to southern Arizona?

G. papa (LINN.). **King Vulture.**[1]

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[1] *Vultur papa* LINN., S. N. ed. 10, i. 1758, 86. *Gypagus papa* VIEILL., Nouv. Dict. xxxvi. 1819, 456.

Genus **PSEUDOGRYPHUS** Ridgway. (Page 219, pl. LXIV., fig. 4.)

Species.

Adult: Dull black, the outer webs of greater wing-coverts and secondaries hoary grayish, the former tipped and the latter edged with white; axillars and under wing-coverts pure white; bill whitish or pale yellowish, and naked skin of head and neck yellowish or orange in life. *Young:* Similar to adult, but feathers of upper parts more distinctly bordered with brownish (producing a squamate appearance), the outer webs of greater wing-coverts and secondaries dusky, and without any white on axillars or under wing-coverts; bill and naked skin of head and neck dusky, the latter more or less covered with soft sooty grayish down. *Downy young:* Dull white, the naked skin of head and neck dull yellow. Length 44.00–55.00 inches, extent 8½ to nearly 11 feet, weight 20 to 25 pounds, wing 30.00–35.00 inches, tail 15.00–18.00, culmen 1.50, tarsus 4.40–5.00, middle toe 4.00–4.50. *Nest* a cavity or recess among rocks or a hollow in stump, log, or tree-trunk. *Eggs* 1–2, 4.46 × 2.48, elongate-ovate, plain pale dull grayish green or dull greenish white. *Hab.* Pacific coast of United States, north to the Columbia; southern Utah? (Now much reduced in numbers, and extinct in many localities where formerly abundant.)................................ 324. **P. californianus** (Shaw). **California Vulture.**

Genus **CATHARTES** Illiger. (Page 219, pl. LX., fig. 2; pl. LXIV., figs. 6, 8.)

Species.

Common Characters.—General color black, uniform on lower parts (sometimes on upper parts also); bill white, and naked skin of head reddish or yellowish in adult, both dusky in young.

*a*¹. Upper portion of neck, all round, naked; wing 20.00, or more.

*b*¹. Plumage of upper parts grayish brown, the feathers glossy blackish centrally, the secondaries edged with grayish or whitish; naked skin of head (in adult) livid crimson in life.

Adult: Neck and lower parts uniform dull black; upper parts blackish, with a greenish and violet gloss, the feathers of the back, the scapulars, and wing-coverts with margins broadly (but not abruptly) light grayish brown; edge of secondaries light grayish brown, varying to light ashy; shafts of quills and tail-feathers pale brown, varying to yellowish white; bill chalk-white; iris grayish brown; naked skin of head and upper neck (in life) dull livid crimson, brightening to lake-red on cere, the lores and top of head sometimes with whitish wart-like papillæ. *Young:* Similar to adult, but bill blackish, and naked skin of head and neck livid dusky, and the brownish margins to wing-coverts, etc., less distinct. *Downy young:* Covered with pure white cottony down, the head, however, naked, and sallow dusky. Length 26.00–32.00, extent about 6 feet, wing 20.00–23.00

inches, tail 11.00–12.00, culmen 1.00, tarsus 2.25–2.30, middle toe 2.50. *Nest* a cavity among rocks or in hollow of a log, stump, or tree-trunk, without additional material. *Eggs* 2, 2.83 × 1.93, ovate or broadly elliptical ovate, white, buffy white, or greenish white, more or less spotted or blotched with rich brown (madder or burnt-umber) and purplish gray. *Hab.* Nearly the whole of temperate and tropical America, including West Indies; south to Falkland Islands and Patagonia, north, more or less regularly, to southern New England, New York, the Saskatchewan, and British Columbia.

325. **C. aura** (Linn.). **Turkey Vulture.**

b^1. Plumage of upper parts entirely uniform dull black; naked skin of head and upper neck of adult yellow in life.

Wing 20.00, tail 12.00, culmen .82, tarsus 2.50, middle toe 2.40. *Hab.* Amazonian region of South America (Guiana to eastern Peru).

C. pernigra (Sharpe). **Amazonian Turkey Vulture.**[1]

a^2. Upper part of hind-neck feathered quite to the occiput; wing less than 20.00.

Adult: Entirely uniform black (as in *C. pernigra*), the shafts of the quills white; "bill and cere reddish white; crown and lower side of head pale violet or sky-blue; side of head, neck, and throat beautiful gray-orange;" iris red; bill white. *Immature:* "Iris blackish gray; head in very young birds reddish gray, whitish on crown and over the eye; neck bluish, subsequent to which the head becomes reddish violet, with a whitish blue patch on the occipital region." (Gurney.) *Downy young:* "The down is light rufous; the bill, the lower part of the face, and the cheeks, are black; the rest of the head light rufous washed with brown; the iris chocolate; the feet flesh-color, with blackish scales."[2] Length about 22.00–25.00, wing 18.00–18.50, tail 8.50–9.00, culmen .80–.90, tarsus 2.10–2.40, middle toe 2.15–2.25. *Hab.* Eastern tropical America (except West Indies), from Brazil to eastern Mexico (Vera Cruz); southern Texas?

C. burrovianus Cass. **Burroughs's Turkey Vulture.**[3]

Genus CATHARISTA Vieillot. (Page 219, pl. LXIV., fig. 7.)

Species.

Adult: Entire plumage uniform dull black, the quills grayish basally (hoary whitish on under surface), their shafts pure white; bill dusky with yellowish or whitish tip; naked skin of head and fore-neck dusky. *Young:* Not obviously different from the adult (?). Length 23.00–27.00; extent about 54.00; wing 16.50–17.50, tail 7.50–8.50, culmen .90–.95, tarsus 3.00, middle toe 2.90. *Nest* a hollow in stump, log, or tree-trunk, or secluded spot among undergrowth of woods. *Eggs* 1–2, 3.01 × 2.05, ovate or broadly elliptical-ovate, similar in coloration to those of *Cathartes aura*, but usually more sparsely marked. *Hab.* Whole of tropical and warm-temperate America, south to Argentine Republic and Chili, north regularly to North Carolina and lower Mississippi Valley, irregularly or casually to Maine, New York, Ohio, Indiana, Illinois, Dakota, etc. (Apparently wanting in western Mexico and California)........................ 326. **C. atrata** (BARTR.). **Black Vulture.**

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[1] *Œnops pernigra* Sharpe, Cat. B. Brit. Mus. i. 1874, 26. *Cathartes pernigra* Ridgw., Bull. Nutt. Orn. Club, v. 1880, 83.

[2] Professor A. Dugès, of Guanajuato, Mexico, in letter. I refer somewhat doubtfully the bird which he describes to *C. burrovianus*, for the reason that it certainly is not *C. aura* nor *Catharista atrata*, and no other species besides these and *C. burrovianus* is known to inhabit Mexico. Drawings sent by Professor Dugès, representing both the bird under consideration and the corresponding stage of *Catharista atrata*, show conclusively that it is a true *Cathartes*.

[3] *Cathartes burrovianus* Cass., Proc. Ac. Nat. Sci. Phila., ii. 1845, 212.

FAMILY FALCONIDÆ.—VULTURES, FALCONS, HAWKS, EAGLES, ETC.

(Page 218.)

Genera.

*a*¹. Outer toe not reversible; claws graduated in size from the largest (that of hind-toe) to the smallest (that of outer toe), broader and (except in *Elanus*) grooved on under side.
  *b*¹. Nostril not circular, nor linear and oblique, with the upper end the posterior one, nor with central bony tubercle. (Subfamily *Accipitrinæ.*)
    *c*¹. Tail deeply forked.................................... **Elanoides.** (Page 224.)
    *c*². Tail not deeply forked.
      *d*¹. Wing not more than 18.00.
        *e*¹. Tarsi naked in front.
          *f*¹. Front of tarsi covered with minute roundish scales; claws not grooved beneath............... **Elanus.** (Page 224.)
          *f*². Front of tarsus covered with large transverse scutellæ; claws grooved beneath.
            *g*¹. Cutting-edge of upper mandible notched. **Ictinia.** (Page 225.)
            *g*². Cutting-edge of upper mandible not notched.
              *h*¹. Tip of upper mandible produced into a conspicuous lengthened hook. **Rostrhamus.** (Page 225.)
              *h*². Tip of upper mandible not produced into a conspicuous lengthened hook.
                *i*¹. Face encircled by a "ruff" of short, stiffened, compact feathers, as in the Owls. **Circus.** (Page 226.)
                *i*². Face not encircled by a ruff.
                  *j*¹. Tail decidedly more than two-thirds as long as wing.
                    *k*¹. Depth of bill at base not decidedly less than chord of culmen; middle toe equal to or longer than

naked portion of tarsus in front; lores densely feathered. **Accipiter.** (Page 227.)

- k^2. Depth of bill at base decidedly less than chord of culmen; middle toe much shorter than naked portion of tarsus in front; lores nearly naked. **Parabuteo.** (Page 228.)

- j^2. Tail not more than two-thirds as long as wing.
  - k^1. Primaries exceeding secondaries by less than length of naked portion of tarsus in front. **Urubitinga.** (Page 238.)
  - k^2. Primaries exceeding secondaries by much more than length of naked portion of tarsus in front.
    - l^1. Wing less than four times as long as tarsus. **Asturina.** (Page 239.)
    - l^2. Wing more than four times as long as tarsus. **Buteo.** (Page 229.)

- e^2. Tarsi densely feathered in front and on sides, down to base of toes.................................. **Archibuteo.** (Page 240.)

- d^2. Wing more than 18.00.
  - e^1. Tarsus densely feathered, all round, down to base of toes. **Aquila.** (Page 241.)
  - e^2. Tarsus naked, all round, for lower third, or more.
    - f^1. Wing much rounded (fifth to seventh quills longest, the first shortest), the secondaries very large and broad, reaching nearly or quite to tips of quills; tail nearly as long as wing; occiput conspicuously crested; feet enormously developed...... **Thrasaëtus.** (Page 242.)
    - f^2. Wing pointed (third to fifth quill longest, the first longer than ninth), the secondaries only moderately developed, their ends falling far short of tips of quills; tail less than two-thirds as long as wing; occiput not crested; feet moderately developed.
      - g^1. Tail rounded, consisting of 12 feathers. **Haliæëtus.** (Page 242.)
      - g^2. Tail graduated, or wedge-shaped, consisting of 14 feathers.............. **Thalassoaëtus.** (Page 243.)

- b^1. Nostril small, circular, with a conspicuous central bony tubercle, or else narrow, obliquely vertical, with the upper end the posterior one. (Subfamily *Falconinæ.*)

*c*¹. Nostril circular; cutting-edge of upper mandible with a strong tooth-like projection, separated from the strongly hooked tip by a distinct notch.. **Falco.** (Page 244.)

*c*². Nostril linear, obliquely vertical, the upper end posterior to the lower; cutting-edge of upper mandible without distinct tooth or notch. **Polyborus.** (Page 253.)

*a*². Outer toe reversible; claws all of the same length, narrower and rounded on under side.. **Pandion.** (Page 254.)

GENUS ELANOIDES VIEILLOT. (Page 222, pl. LXV., fig. 1.)

Species.

Head, neck, entire lower parts (including under wing-coverts and basal half of secondaries, underneath), and band across rump, pure white; back, wings, and tail plain polished blackish; tertials white, with blackish tips. *Adult:* White of head and neck immaculate; back, scapulars, and lesser wing-coverts with a soft velvety gloss of dark bronzy purplish, the other black portions with a glaucous or chalky cast. *Young:* Head and neck narrowly streaked with dusky; the black of back, etc., less glossy, more brownish, and with greenish instead of bronzy purple reflections; quills, tail-feathers, and primary coverts narrowly bordered at tips with white. Length 19.50–25.50, wing 15.40–17.70, outer tail-feathers 12.50–14.50, culmen 0.70–0.80, tarsus 1.00–1.30, middle toe 1.00–1.20. *Nest* in tops of tall trees, usually near water-courses. *Eggs* 1–4, 1.85 × 1.46, white or buffy white boldly spotted or blotched, chiefly round larger end, with hazel-brown, chestnut, or rich madder-brown. *Hab.* Tropical and warm-temperate portions of continental America, north in the interior regularly to Iowa, Minnesota, Illinois, etc., along Atlantic coast casually to Pennsylvania and southern New England; accidental in England................................ 327. **E. forficatus** (LINN.). **Swallow-tailed Kite.**

GENUS ELANUS SAVIGNY. (Page 222, pl. LXV., fig. 2.)

Species.

Adult: Above plain pale bluish-gray, becoming gradually white on head and tail, with a large patch of uniform deep black covering lesser wing-covert region; lower parts entirely pure white; a black spot in front of and partly surrounding eye. *Young:* Somewhat like adult, but tinged with rusty, and with indistinct dusky streaks, on upper parts, the wing-feathers narrowly tipped with white; tail with an indistinct subterminal band of dusky; breast stained, or indistinctly blotched or streaked, with yellowish rusty. Length 15.15–16.75, wing 11.50–13.30, tail 5.90–7.40, culmen .65–.80, tarsus 1.20–1.50. *Nest* on trees, near water. *Eggs* 3–5, 1.65 × 1.32, handsomely marbled or clouded with various shades of rich madder-brown on a paler (sometimes whitish) ground. *Hab.* Tropical and subtropical

America (except West Indies), north to South Carolina, southern Illinois (casual?), and central California................ 328. **E. leucurus** (VIEILL.). **White-tailed Kite.**

GENUS **ICTINIA** VIEILLOT. (Page 222, pl. LXV., fig. 3.)

Species.

COMMON CHARACTERS.—*Adults:* Uniform plumbeous, becoming lighter (whitish) on head and darker (blackish) on quills and tail; inner webs of quills partly rufous. *Young:* Lower parts whitish, striped with brown; upper parts varied with whitish and brown; tail crossed by several narrow whitish bands.

*a*¹. *Adult:* Wings lighter than tail, the secondaries hoary whitish; inner webs of quills with indistinct spots of rufous, and outer webs with very indistinct stripe of the same; tail without white markings. *Young:* Head, neck, and lower parts white, sometimes tinged with buff (especially on thighs), longitudinally spotted or striped with brown; upper parts blackish brown, the feathers margined terminally with whitish, and with concealed spots of the same; tail blackish, crossed by several (about three exposed) narrow bands of dusky grayish, this changing to white on inner webs; under wing-coverts buffy, spotted with rusty. Length 13.00–15.50, wing 10.60–12.30, tail 6.00–7.00. *Nest* in tops of trees, usually near rivers. *Eggs* 2–3, 1.61 × 1.34, white usually sparsely and very faintly marked (adventitiously stained?) with pale brownish. *Hab.* More southern United States, east of Rocky Mountains, north regularly to Georgia, southern Illinois, Kansas, etc., casually, or irregularly, to Pennsylvania, Wisconsin, and Iowa; south, through eastern Mexico, to Guatemala............ 329. **I. mississippiensis** (WILS.). **Mississippi Kite.**

*a*². *Adult:* Wing concolor with the tail, the secondaries black; inner webs of primaries almost wholly rufous, the outer webs with only a trace of this color; tail with about three narrow bands of white, across inner webs. *Young:* Above blackish, the feathers bordered terminally with white; head, neck, and lower parts whitish, striped with blackish. Wing 10.50–12.20, tail 5.60–6.80. *Hab.* Tropical America (except West Indies), north to southern Mexico, south to Paraguay.
I. plumbea (GMEL.). **Plumbeous Kite.**[1]

GENUS **ROSTRHAMUS** LESSON. (Page 222, pl. LXV., fig. 4.)

Species.

Adult: Uniform slate-color, becoming nearly black on quills and tail, the wing-coverts inclining to brownish gray, the head and neck with more or less of a glaucous or chalky cast, the former nearly black anteriorly; tail-coverts and base of tail white; tip of tail light grayish brown; bill black; cere and feet rich orange or orange-red, and iris crimson, in life. *Young:* Tail much as in adult. Upper parts blackish brown, each feather tipped or bordered terminally with rusty or ochraceous; head and neck streaked with the same; superciliary stripe and lower parts ochraceous (varying to buffy whitish), spotted or striped with dusky. Length 16.00–18.00, extent 44.00–46.00, wing 12.90–14.25, tail 7.20–8.50, culmen 1.00–1.10. *Nest* built on top of bushes or tall rank grasses in open marshes. *Eggs* usually 2, 1.75 × 1.46, blotched, marbled, and stained with various shades of brown on a paler (sometimes bluish white) ground-color. *Hab.* Whole of tropical America, except part of West Indies; south to Argentine Republic and Ecuador, north to Florida and Atlantic coast of Mexico......... 330. **R. sociabilis** (VIEILL.). **Everglade Kite.**

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[1] *Falco plumbeus* GMEL., S. N. i. 1788, 283. *Ictinia plumbea* VIEILL., Nouv. Dict. 1816, 24.

GENUS **CIRCUS** LACÉPÈDE. (Page 222, pl. LXVII., fig. 1.)

Species.

Adult male: Head, neck, chest, and upper parts uniform light bluish gray, the occiput darker and streaked with whitish, tinged with rusty; longer quills blackish toward tips; upper tail-coverts plain white; tail bluish gray, mottled with white toward base, narrowly tipped with white, crossed near end by a broad blackish band, and, anterior to this, by five to seven narrower and less distinct dusky bands; the inner webs whitish, with the bands more distinct, and sometimes tinged with rusty; under surface of wing (except terminal third, or more, of quills), and lower parts from breast backward, white, the larger under wing-coverts and lower parts with more or less numerous transverse (usually cordate) spots of rusty or brown. *Adult female:* Above dusky brown, the head and neck streaked, the lesser wing-coverts spotted, and feathers of rump edged, with rusty; upper tail-coverts plain white; tail brown, paler at tip, and crossed by six or seven very regular and distinct bands of blackish; the brownish spaces becoming gradually paler and more rusty to outer feathers, which are more ochraceous; sides of head light dull buffy, with a dusky stripe behind eye; feathers of "facial disk" buff, each with a median streak of dark brown; chin, throat, and lower parts generally, dull buffy whitish, varying to deeper dull buffy, striped (except on chin and throat) with brown, the stripes becoming gradually much narrower posteriorly. *Young:* Above blackish brown, the head and neck streaked and lesser wing-coverts spotted with deep rusty; upper tail-coverts white, tinged more or less with ochraceous; tail crossed by four broad bands of black, the interspaces being dark brown on middle feathers, changing gradually to ochraceous on outer feathers; ear-coverts uniform rich dark brown; feathers of "facial disk" dark brown, broadly edged with rufous; lower parts rich rusty ochraceous, growing gradually paler posteriorly, the breast and sides narrowly and (usually) indistinctly streaked with darker, but elsewhere immaculate. *Downy young:* Entirely pale cinnamon-buffy, tinged with grayish on back, and becoming almost white on lower parts. Length 19.50–24.00, wing 12.90–16.00, tail 8.80–10.50, tarsus 2.85–3.25, middle toe 1.20–1.55. *Nest* on ground, in meadows, usually near ponds or marshes. *Eggs* 3–8, 1.81 × 1.41, white, or bluish white, usually plain, but often more or less spotted or blotched with pale brown. *Hab.* Whole of North America; south, in winter, to Panama, Bahamas, and Cuba. 331. **C. hudsonius** (LINN.). **Marsh Hawk.**

GENUS **ACCIPITER** BRISSON. (Page 223, pl. LXVI., figs. 1–3.)

Species.

COMMON CHARACTERS.—*Adults* uniform bluish gray above, the top of the head darker, feathers of occiput pure white beneath surface; tail crossed by several bands of blackish and narrowly tipped with white; lower parts white, the breast, sides, and flanks barred with grayish, dusky, or rufous. *Young:* Dusky brown above, more or less spotted with lighter, the feathers bordered with rusty; tail grayish brown, banded with blackish, and narrowly tipped with white; lower parts white or buffy, striped with brown or dusky.

*a*¹. Bare portion of tarsus in front longer than middle toe; wing less than 12.00. (Subgenus *Accipiter.*)

*b*¹. Tail even or slightly emarginate; wing not more than 8.80; top of head in adult not conspicuously different in color from back. *Adult male:* Above bluish gray, the top of the head darker but not inclining to black; sides of head light rusty, streaked with darker; breast, sides, etc., mixed vinaceous-rufous and white, in transverse spots and bars, the first without ashy tinge laterally; length 10.00–11.50, wing 6.10–7.10, tail 5.80–6.10, tarsus 1.90–2.05. *Adult female:* Similar in color to the male, but upper parts less bluish, white of lower parts less pure and rufous spotting of a less vinaceous tint; length 12.50–14.00, wing 7.80–8.80, tail 6.60–8.20, tarsus 2.00–2.25. *Young:* Dusky brown above, the feathers bordered with rusty and more or less mixed with white spotting (mostly concealed); lower parts white, often tinged with buff, striped with clear brown or dusky, the sides, flanks, and thighs transversely spotted with same. *Nest* very variable in situation and character, but usually in trees—often in hollows among rocks or in trees. *Eggs* 2–5, 1.46 × 1.20, white, greenish white, or bluish white, usually very heavily blotched with brown. *Hab.* Whole of North America; south, in winter, to Guatemala.................... 332. **A. velox** (WILS.). **Sharp-shinned Hawk.**

*b*². Tail decidedly rounded; wing not less than 8.85; top of head in adult black, in marked contrast with bluish gray of back. *Adult male:* Similar in plumage to corresponding stage of *A. velox*, but top of head blackish, sides of head more or less washed with bluish gray, and sides of breast tinged with the same; length 14.00–17.00, wing 8.85–9.40, tail 7.80–8.30, tarsus 2.30–2.60. *Adult female:* Colors duller than in male, the upper parts less bluish, the hind-neck and sides of head washed with dull rusty, top of head duller, more brownish, black, and sides of breast without ashy tinge; length 18.00–20.00, wing 10.10–11.00, tail 9.00–10.50, tarsus 2.60–2.85. *Young:* Similar to corresponding stage of *A. velox*, but rather less broadly striped beneath, with much less of transverse spotting on flanks, etc. *Downy young:* Uniform white. *Nest* usually in high trees (often a deserted crow's nest). *Eggs* 1.93 × 1.52, usually plain bluish white, rarely faintly spotted with pale brownish. *Hab.* Whole of temperate North America, including greater part of Mexico.

333. **A. cooperi** (BONAP.). **Cooper's Hawk.**

*a*². Bare portion of tarsus in front shorter than middle toe; wing more than 12.00. (Subgenus *Astur* LACÉPÈDE.)

*b*¹. *Adult:* Above, including whole back, clear bluish gray, or plumbeous, with blackish shaft-streaks; top of head deep black, the feathers pure white beneath surface; tail bluish gray, crossed by about four dusky bands, these sometimes nearly obsolete on upper surface; lower parts white, the breast, belly, sides, and flanks thickly zigzagged or irregularly barred with slaty grayish, the feathers, especially on breast, often with dusky mesial streaks. *Young:* Above dusky grayish brown, more or less spotted with pale buff or whitish, the feathers margined with buff, those of head and neck edged or streaked with same; tail light grayish brown, narrowly tipped with white, and crossed by four distinct bands of dusky, with a fifth, less strongly marked, concealed by upper coverts; lower parts whitish, or pale buff, with distinct narrow stripes of blackish, these more tear-shaped on belly, broader and more spot-like on sides and flanks. *Male:* Length about 22.00, wing 12.00–13.25, tail 9.50–10.50, tarsus 2.70–3.05. *Female:* Length about 24.50, wing 13.50–14.25, tail 11.50–12.75, tarsus 2.70–3.05. *Nest* in trees. *Eggs* 2–5, 2.32 × 1.79, white, or glaucous-white, sometimes very faintly marked with pale brownish. *Hab.* Northern and eastern North America, breeding chiefly north of the United States, except in higher mountains; west to and including Rocky Mountains, where breeding as far south as Colorado.

334. **A. atricapillus** (WILS.). **American Goshawk.**

*b*². *Adult:* Above dark plumbeous, the back inclining to sooty blackish; otherwise like *A. atricapillus*, but markings on lower parts much heavier, and darker in tint. *Young:* Above brownish black, this color predominating largely over the lighter markings; stripes on lower parts much broader than in *A. atricapillus*, and deep black, the thighs with large, often cordate, spots of the same. *Eggs* 2.36 × 1.79. *Hab.* Pacific coast, north to Sitka, and breeding southward to at least 39° in Sierra Nevada.

334*a*. **A. atricapillus striatulus** RIDGW. **Western Goshawk.**

GENUS PARABUTEO RIDGWAY. (Page 223, pl. LXVI., fig. 4.)

Species.

COMMON CHARACTERS.—Wing 11.65–14.60, tail 9.00–11.00, culmen 0.82–1.10, tarsus 2.78–3.75, middle toe 1.52–2.00. *Adult:* Prevailing color dark chocolate-brown, or sooty, sometimes uniform, sometimes varied by whitish or ochraceous spotting; lesser wing-coverts, and tibiæ, deep rufous; tail-coverts white; tail black, with white base and tip. *Young:* Plumage greatly variegated. Above dusky brown, the feathers edged with rusty, head and neck streaked with ochraceous; lower parts pale ochraceous, or buffy whitish, the breast and belly with longitudinal ovoid spots of blackish; tibiæ with transverse bars of dark rusty; lower tail-coverts with black shaft-streaks; lesser wing-covert region merely washed with rufous; tail grayish brown, whitish at tip, and crossed by numerous (about 19) narrow bands of dusky.

a^1. *Adult* never with the darker portions of the plumage uniform, but more or less broken, especially on lower parts, with whitish and buffy spotting and streaking; tibiæ barred with ochraceous; wing 11.65–14.60, tail 9.00–10.50, culmen .82–1.02, tarsus 2.78–3.40, middle toe 1.52–2.00. *Hab.* South America, as far as Chili and the Argentine Republic.

P. unicinctus (Temm.). **One-banded Hawk.**[1]

a^2. *Adult* with the darker portions of the plumage perfectly uniform; prevailing color uniform dark sooty brown; lesser wing-coverts, under wing-coverts, and thighs plain rich chestnut-rufous; middle wing-coverts dusky medially, rufous on edges; tail black, the base and a broad band at tip, white; tail-coverts white, the upper sometimes with blackish shaft-streaks. *Immature:* Similar to adult, but the blackish above broken by ochraceous edgings, the head and neck thickly streaked with the same; lower parts ochraceous, striped or longitudinally spotted with dusky; thighs narrowly barred with rusty and dark brown; tail as in adult, but white band at tip narrower and less sharply defined, and inner webs of feathers more or less distinctly barred with dusky, grayish brown, and white.[2] *Downy young:* Above pale chestnut-buffy, paler (almost dull whitish) across hind-neck; lower parts entirely dull whitish, tinged, more or less, with dull brownish buff. *Male:* Length 17.50–21.00, wing 12.35–13.75, tail 9.80–10.20, culmen .90–.95, tarsus 3.15–3.20, middle toe 1.65–1.70. *Female:* Length 21.00–24.00, wing 14.25–14.50, tail 10.80–11.00, culmen 1.08–1.10, tarsus 3.40–3.75, middle toe 1.90–2.00. *Nest* on bushes or low trees. *Eggs* 2–4, 2.13 × 1.65, white, glaucous-white or buffy white, usually more or less marked with light brownish. *Hab.* Middle America, north to southern border of United States (Louisiana to Lower California).

335. **P. unicinctus harrisi** (Aud.). **Harris's Hawk.**

Genus BUTEO Cuvier. (Page 223, pl. LXVIII., figs. 2–5; pl. LXXII., fig. 8.)

Species.

a^1. Tail more than half as long as wing; tarsus much less than half as long as tail; primaries exceeding secondaries by much less than length of tail.

b^1. Four outer primaries with inner webs distinctly emarginated.

c^1. Outer webs of primaries without white, buffy, or ochraceous spots.

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[1] *Falco unicinctus* Temm., Pl. Col. i. 1824, pl. 313. *Parabuteo unicinctus* Ridgw. in B. B. & R. Hist. N. Am. B. iii. 1874, 249.

[2] In this stage much resembling the *adult* of *P. unicinctus.*

d^1. Middle toe decidedly longer than bare portion of tarsus in front; length of cere on top less than depth of bill at anterior edge of cere.

e^1. Outer webs of quills (in adult) plain hoary grayish, paler, more ashy, at tips; naked portion of tarsus, in front, more than 2.00.

Adult: Head, neck, and lower parts white, the first streaked with dusky, these streaks more crowded across cheeks, where forming a rather distinct "mustache"; throat very narrowly streaked, the sides, flanks, and lower part of belly (sparsely), more broadly streaked with dusky, and sides of breast with broader, somewhat wedge-shaped, markings of the same; thighs tinged with buffy or ochraceous; under wing-coverts white, with a large dusky patch covering anterior portion of lesser covert region; upper parts in general dark slaty brownish, tinged here and there ashy and somewhat broken by irregular admixture of whitish, especially on scapulars and larger wing-coverts; rump blackish; upper tail-coverts white, tinged with rufous, and crossed by irregular, distant bars of dusky; tail mostly light rufous, but this much broken by irregular longitudinal washes and "daubs" of ashy, and darker longitudinal mottlings or interrupted streaks, on both webs; crossed near end by an irregular but distinct band of blackish, the tip white, and the basal portion whitish; length about 21.50, wing 15.75, tail 9.10, culmen 1.05, tarsus 3.25, middle toe 1.70. *Hab.* California (Santa Clara); only one example known.

—. **B. cooperi** Cass. **Cooper's Henhawk.**

e^2. Outer webs of quills grayish brown, marked with quadrate dusky spots, producing bands; bare portion of tarsus in front less than 2.00.

f^1. Middle toe usually more than 1.60 (minimum 1.50, maximum 1.95); tail of adult usually with much of rufous, with or without darker bands; *young* with tail grayish brown, crossed by nine or ten distinct narrow bands of dusky.

g^1. Head and neck uniform dark sooty brown or blackish, or else streaked with white (very rarely, if ever, streaked with buffy or ochraceous). *Adult:* Tail confusedly or irregularly mottled with grayish, rusty, white, and dusky, either color predominating (except the last) according to the individual, crossed near end by a more or less distinct subterminal band, and tipped with whitish; upper parts chiefly (sometimes entirely) dark sooty brown or blackish (varying to deep black); lower parts varying from entirely deep sooty brown or black to pure white, but, if the latter, always more or less streaked and spotted, especially across belly and on sides of breast, with dusky. *Young:* Tail banded with grayish brown and dusky, the two colors of about equal extent; otherwise, much like adult. *Male:* Length 20.00–21.00, wing, 14.25–16.10, tail 8.80–10.00, culmen, .98–1.00, tarsus 2.75–3.50, middle toe 1.50–1.70. *Female:* Length 22.00–23.50, wing 15.75–16.50, tail 9.10–10.00, culmen .98–1.10, tarsus 2.85–3.50, middle toe 1.60–1.80. *Hab.* Gulf States and lower Mississippi Valley, north, casually, to Kansas, Iowa, Illinois, and Pennsylvania, east to Georgia.

338. **B. borealis harlani** (AUD.).
Harlan's Hawk.

g^3. Feathers of head and neck more or less distinctly edged with ochraceous or rusty. *Adult:* Tail rufous, paler at tip, usually crossed near end by a narrow band or bar of blackish (rarely with more or less distinct narrow bands, or indications of bands, anterior to the subterminal band); upper parts chiefly or entirely dusky grayish brown, sometimes irregularly broken by admixture of whitish and brownish gray; lower parts varying from entirely pure white (usually with dusky streaks across belly) to wholly sooty blackish, with or without rusty on breast. *Young:* Tail grayish brown, varying to dull ochraceous, crossed by nine or ten well-defined narrow bands of blackish; otherwise much like adult, but usually with much less of tawny or ochraceous. *Male:* Length about 19.00–22.50, extent of wings 49.00–53.00, wing 13.50–16.50, tail 8.50–10.00, culmen .95–1.08, tarsus 2.40–3.20, middle toe 1.60–1.70, weight 2–3 pounds. *Female:* Length 23.00–25.00, extent 54.00–57.50, wing 15.25–17.75, tail 9.50–10.50, culmen 1.00–1.15, tarsus 3.15–3.40, middle toe 1.60–1.70, weight 3–4 pounds. *Nest* usually in tall trees. *Eggs* 2–4, 2.30, or more, × 1.80, or more, dull white or bluish white, usually more or less spotted or blotched with brown.

*h*¹. Tail of adult always (?) with a subterminal black bar, or else prevailing color of plumage white.

*i*¹. Plumage never chiefly blackish.

*j*¹. Deeper colored, with dusky and grayish brown prevailing on upper parts, the lower parts more or less buffy, especially posteriorly; *adult* with tail deep rusty rufous. *Eggs* 2.38 × 1.81. *Hab.* Eastern North America, west to border of Great Plains; occasional in eastern Mexico; Panama (casual?). 337. **B. borealis** (GMEL.). **Red-tailed Hawk.**

*j*². Lighter colored, with much white on upper parts, tail pale rufous (usually without the dusky subterminal bar), the lower parts entirely pure white, or pale buffy only on thighs, etc., with little if any spotting across belly. *Eggs* 2.31 × 1.80. *Hab.* Great Plains, from Minnesota to Texas; east, irregularly or casually, to Iowa and northern Illinois.

337*a*. **B. borealis kriderii** HOOPES. **Krider's Hawk.**

*i*². Plumage often chiefly blackish, sometimes entirely sooty, except tail and its upper coverts.

Adult: Varying, individually, from a light extreme which is scarcely distinguishable from true *B. borealis* to a uniform dark sooty brown, through every conceivable intermediate plumage; some melanistic specimens have the whole chest and breast rusty or rufous (corresponding to the white area of very light-colored birds), but this is wholly obliterated in the complete melanism. *Young:* Darker throughout and more heavily spotted beneath than in true *B.*

borealis, the plumage sometimes wholly dusky (except the tail), as in the adult.

Tail of adult always with a black subterminal bar, and frequently with several, more or less complete, additional bars. *Eggs* 2.31 × 1.80. *Hab.* Western North America, south into Mexico, east to Rocky Mountains (casually to Illinois).

337*b*. **B. borealis calurus** (CASS). **Western Red-tail.**

*h*². Tail of adult without any black bars; otherwise, much like *B. borealis calurus*. *Hab.* Cape St. Lucas.

337*c*. **B. borealis lucasanus** RIDGW. **St. Lucas Red-tail.**

*f*². Middle toe not more than 1.55; tail of adult (and young) grayish brown, sometimes slightly touched with rufous, crossed by an indefinite number (but varying from about 10 to 13) of narrow bands of dusky, which become gradually indistinct and finally obsolete toward base.

Plumage exceedingly variable, but usually a mixture of sooty brown and whitish, in variable relative quantity; sometimes entirely dusky (except tail) and rarely almost entirely white; length about 20.00–23.00, wing 15.50–16.60, tail 8.80–10.00, culmen .85–.95, tarsus 3.00–3.50, middle toe 1.40–1.55. *Hab.* Northern portions of eastern hemisphere; accidental in Michigan?

336. **B. buteo** (LINN.). **European Buzzard.**

*d*². Middle toe not decidedly longer than bare portion of tarsus in front; length of cere on top greater than depth of bill at anterior edge of cere.

Plumage uniform black, or blackish brown, the feathers pure white at bases; tail grayish brown or grayish, more or less banded with black, the inner webs, however, chiefly white. *Adult:* Tail black, crossed by three broad zones, which are ash-gray on outer webs and pure white on inner. *Young:* Tail dark grayish brown (the inner webs partly, sometimes entirely, white), crossed by numerous narrow, oblique bands of black. *Male:* Length 18.50–19.60, extent 49.50, wing

15.00–15.60, tail 8.50–9.15, culmen .73–.88, tarsus 2.40–2.70, middle toe 1.60–1.65. *Female:* Length 20.85–21-50, extent 53.10, wing 16.50–17.40, tail 9.00–10.75, culmen .90–1.00, tarsus 2.70–2.80, middle toe 1.80–1.85. *Eggs* 2–4, 2.19 × 1.72, dull white, usually spotted or speckled, chiefly on larger end, with umber brown. *Hab.* Middle America, north to southern California, Arizona, Texas, etc., south to northern South America.

340. **B. abbreviatus** Cab. **Zone-tailed Hawk.**

*c*². Outer webs of primaries distinctly spotted with white, buffy, or ochraceous.

Tail narrowly banded with white, buffy, or ochraceous, lesser wing-coverts more or less rusty. *Adult:* Head, neck, and lower parts more or less rusty, or cinnamon, the first two streaked with dusky, the posterior lower parts more or less barred or transversely spotted with whitish; quills and tail black, the former spotted on outer webs with white, the latter crossed by about six narrow bands of and tipped with the same. *Young:* Head, neck, and lower parts buffy or dull whitish, streaked and striped or longitudinally spotted with dark brownish; quills and tail dusky, the former extensively spotted on basal portion of outer webs with buffy or ochraceous, the latter crossed by numerous narrow bands of dull buffy or pale grayish brown (the more anterior ones more ochraceous). *Downy young:* Uniform dull grayish white. *Nest* in large or tall trees. *Eggs* 2–4, white, glaucous-white, buffy white, or pale brownish, variously marked (spotted, blotched, or stained) with various shades of brown.

*d*¹. *Adult* with head and neck distinctly rusty.

e.¹ *Adult:* Rufous or rusty of anterior lower parts (chest and breast) usually distinctly barred or transversely spotted with white. *Young:* Lower parts usually with whitish predominating, and basal half of outer webs of quills extensively ochraceous, buffy, or whitish. *Male:* Length 17.50–19.50, wing 11.25–13.50, tail 8.00–9.70, culmen .75–.90, tarsus 2.70–3.25, middle toe 1.30–1.50. *Female:* Length 19.00–22 00, wing 13.35–14.25, tail 9.00–10.00, culmen .80–.90, tarsus 3.10–3.20, middle toe 1.35–1.50. *Eggs* 2.13 × 1.69. *Hab.* Eastern North America, north to Nova Scotia and Canada, west to edge of Great Plains.

339. **B. lineatus** (Gmel.). **Red-shouldered Hawk.**

*e*². *Adult:* Rufous or rusty of anterior lower parts (chest and breast) usually (always?) unbroken. *Young:* Lower parts with deep brownish or dusky prevailing; buffy or ochraceous spots on outer webs of quills much reduced in extent. *Male:* Wing 12.00–12.50, tail 8.00–9.00, culmen .78, tarsus 2.90, middle toe 1.40–1.52. *Female:* Wing 13.00, tail 9.50, culmen .90, tarsus 3.00–3.12, middle toe 1.50. *Eggs* 2.19 × 1.71. *Hab.* Pacific coast of United States (and south into Mexico?).

339*b*. **B. lineatus elegans** (Cass.). **Red-breasted Hawk.**

*d*². *Adult* with head and neck grayish, with little if any rufous tinge. *Adult:* Head and neck brownish gray, the feathers with dusky shaft-streaks; those of occiput white, with dusky tips; back and scapulars dull ash-gray, the feathers with large terminal or subterminal spots of dusky (occupying most of exposed portion of each feather); lower parts (including breast) barred with white and pale ochrey rufous. *Young:* Similar to corresponding stage of *B. lineatus*, but smaller and darker in color. Wing 10.90–12.75, tail 7.70–8.50, culmen .80–.90, tarsus 2.90–3.20, middle toe, 1.25–1.45. *Hab.* Florida.

339*a*. **B. lineatus alleni** Ridgw.
Florida Red-shouldered Hawk.

*b*². Only three outer quills with inner webs distinctly emarginated.

*c*¹. Wing more than 13.50. Tail grayish brown, or brownish gray, sometimes with a hoary tinge, crossed by an indefinite number (about 9 or 10) of narrow dusky bands, which toward base of tail become gradually indistinct and finally obsolete. *Adult male, normal plumage:* Above nearly uniform grayish brown; forehead, chin, and throat white, usually abruptly defined and forming a distinct patch; chest and upper part of breast usually plain rufous or cinnamon (rarely mixed or broken with whitish); rest of lower parts buffy whitish, sometimes immaculate, but usually more or less barred or spotted with brownish; length 19.50–20.00, extent 48.00–50.50, weight 1½–2¼ pounds, wing 14.40–16.00, tail 8.00–9.00, culmen .80–.90, tarsus 2.30–2.75, middle toe 1.40–1.60. *Adult female, normal plumage:* Similar to the male, but chest-patch grayish brown instead of rufous, or cinnamon; length 21.00–22.00, extent 50.50–56.00, weight 2¼–3½ pounds, wing 14.75–17.25, tail 9.00–10.00, culmen .80–.95, tarsus 2.50–2.90, middle toe 1.50–1.65. *Melanistic phase, both sexes:* Whole plumage uniform sooty brown, the under tail-coverts sometimes spotted or barred with rusty or whitish. (Note.—In different individuals may be seen every possible intermediate condition of plumage between this complete melanism and the light-colored normal plumage described above.) *Young:* Tail as in adult; above blackish brown varied with buffy or ochraceous; head, neck, and lower parts creamy buff (deeper in younger, paler in older individuals), the lower parts usually more or less spotted with blackish, the head and neck streaked with same. *Nest* on bushes or low trees, sometimes among rocks. *Eggs* 2–4, 2.23 × 1.73, white, dull glaucous white, or buffy white, usually more or less spotted with brown. *Hab.* Western North America, north to Alaska and western side of Hudson Bay, east to Wisconsin, Illinois, and Arkansas (casually to Massachusetts), and south through Middle America and greater part of South America to Argentine Republic.

242. **B. swainsoni** BONAP. **Swainson's Hawk.**

c^2. Wing less than 13.50.

d^1. Middle toe longer than bare portion of tarsus in front. (Subgenus *Buteola* BONAPARTE.)

Adult: Above sooty blackish or blackish brown, the feathers of occiput pure white beneath surface, and the frontlet usually more or less conspicuously whitish; tail slaty grayish, varying to grayish brown, very narrowly tipped with white, and broadly banded with black, the black bands sometimes wider than the grayish interspaces, the latter 5–7 in number. *Young* with tail more narrowly banded, the grayish brown bands usually broadest, and 8–9 in number.

e^1. Lower parts black, or dark sooty brown, like the upper; *young* with feathers much spotted, beneath surface with white, the lower parts sometimes slightly varied with white and ochraceous, the under wing-coverts sometimes spotted with same. *Male:* Wing 11.20–11.70, tail 7.00–7.30, culmen .70–.75, tarsus 2.05–2.25, middle toe 1.35–1.40. *Female:* Wing 11.90–13.10, tail 7.50–8.00, culmen .78–.85, tarsus 2.50–2.65, middle toe 1.50–1.60. *Hab.* Tropical America in general, except West Indies, north to northern Mexico and Florida.

—. **B. fuliginosus** SCL. **Little Black Hawk.**[1]

e^2. Lower parts white. *Adult male:* Forehead, anterior portion of lores, fore-part of malar region, and lower parts generally, immaculate pure white; sides of chest with a patch of rufous or cinnamon, the feathers with dusky shaft-streaks; wing 10.50–12.00, tail 6.00–7.00, culmen .68–.75, tarsus 2.05–2.30, middle toe 1.35–1.40. *Adult female:* Similar to the male, but sides of chest grayish brown instead of rusty. Wing 12.70, tail 7.20, tarsus 2.30, middle toe 1.55. *Young:* Above dull brownish, the scapulars, wing-coverts, etc., usually margined with buffy or light fulvous, the top and sides of head and neck streaked with same;

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[1] *Buteo fuliginosus* SCL. P. Z. S. 1858, 356. (Said to be the black phase of *B. brachyurus* VIEILL.)

lower parts white, sometimes streaked with brownish, the sides of chest without brown or rusty patch. *Hab.* Tropical America in general (except West Indies), north to eastern Mexico and Florida.

344. **B. brachyurus** VIEILL. **Short-tailed Hawk.**

d'. Middle toe shorter than naked portion of tarsus in front. (Subgenus *Buteo*, part.)

Only three outer quills with inner webs emarginated. *Adult:* Tail blackish, crossed by 2–4 broad bands of light brownish gray or brownish white, and narrowly tipped with whitish; upper parts nearly uniform dusky brownish, darker on back; beneath brownish (varying to dull rufous or rusty) anteriorly, usually more or less broken by white transverse spotting; posterior lower parts white, barred or transversely spotted with dull rufous. *Young:* Tail grayish brown, crossed by 5–7 narrow bands of dusky, and tipped with whitish; sides of head and entire lower parts dull white, or buffy, marked longitudinally with blackish or dusky, on breast, sides, etc., the cheeks with a rather distinct "mustache" of dusky streaks. *Male:* Length about 13.25–15.00, wing 9.85–10.70, tail 6.50–7.00, culmen .70, tarsus 2.15–2.80, middle toe 1.20–1.38. *Female:* Length about 16.00–18.00, wing 11.00–11.40, tail 7.00–8.00, culmen .70–.80, tarsus 2.20–2.70. *Nest* in trees (often a deserted crow's nest). *Eggs* 2–4, 1.93 × 1.56, buffy whitish, variously spotted and blotched with brown. *Hab.* Eastern North America, north to New Brunswick and the Saskatchewan, west to edge of Great Plains, south (in winter only?) through Middle America and West Indies to northern South America.

343. **B. latissimus** (WILS.) **Broad-winged Hawk.**

a². Tail less than half as long as wing; tarsus about half as long as tail; primaries exceeding secondaries by nearly the length of the tail. (Subgenus *Tachytriorchis* KAUP.[1])

Only three outer quills with inner webs distinctly emarginated. *Adult male:* Above (except rump) plain bluish gray (varying to slaty or even dusky), the anterior lesser wing-coverts rufous, the longer scapulars much tinged with the same; tail white, crossed near end by a broad band of black, anterior to which are numerous narrow bars or lines of slate-gray or plumbeous, or dusky; rump and lower parts pure white, the throat sometimes dusky or grayish; flanks, rump, and under wing-coverts usually faintly barred with ashy, dusky, or rufous. *Adult female:* Similar to adult male, but rufous patch on lesser wing-coverts more extended, and colors generally darker. *Young:* Tail hoary grayish, growing gradually darker terminally, passing narrowly into dull whitish or rusty at tip, and crossed by numerous narrow and very indistinct bars of darker, these becoming gradually obsolete toward base of tail; general color of plumage brownish black, the lower parts more or less varied with whitish, buffy, or ochraceous. *Downy young:* Upper half of head dark sooty brown, becoming nearly black around eyes; hind-neck, upper back, and wings lighter sooty brown, fading gradually into dull brownish buff on posterior upper parts and buffy whitish on lower parts. *Male:* Wing 14.50–16.75, tail 7.50–9.00, tarsus 3.30–3.60, middle toe 1.55–1.80. *Female:* Wing 17.00–17.75, tail 8.25–10.30, culmen .95–1.05, tarsus 3.30–3.70, middle toe 1.60–1.80. *Nest* on low trees or bushes (usually a yucca). *Eggs* 2–4, 2.36 × 1.87, white, more or less blotched with reddish brown. *Hab.* Whole of Middle America, north to southern Texas.

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[1] *Tachytriorchis* KAUP, Class. Säug. u. Vög. 1844, 123. Type, *Falco pterocles* TEMM.,=*F. albicaudatus* VIEILL.

341. **B. albicaudatus sennetti** ALLEN. **Sennett's White tailed Hawk.**

GENUS **URUBITINGA** LESSON. (Page 223, pl. LXX., fig. 2.)

Species.

COMMON CHARACTERS.—*Adults*, uniform plumbeous-black, the upper tail-coverts, band across tip of tail, and other white bands on tail, pure white. *Young:* Above varied with blackish brown and ochraceous, the former prevailing; lower parts ochraceous or pale buffy, striped with dusky, the thighs barred with the same; tail crossed by numerous narrow bands of blackish and light grayish, mixed with white.

a^1. Tarsus 4.30 or more; upper tail-coverts in adult plain white.

b^1. Tail, of adult, with only two to three white bands, the broadest one more than 2.50 (2.60–4.50) wide; thighs often without white bars, these when present never (?) conspicuous; under wing-coverts destitute of white markings, or else merely speckled with white; wing 16.50–18.00, tail 11.75–12.00, culmen 1.30, tarsus 4.90–5.00, middle toe 1.90–2.10. *Hab.* Tropical America, north to Costa Rica (and Nicaragua?), south to Chili, Paraguay, and the Argentine Republic.
U. urubitinga (GMEL.). **Brazilian Urubitinga.**[1]

b^2. Tail, of adult, with three to four (usually three) white bands, the broadest one not more (usually much less) than 2.00 (1.20–2.00) wide; thighs always marked (usually conspicuously barred) with white; under wing-coverts always (?) barred or speckled with white; wing 15.15–16.50, tail 10.50–11.50, culmen 1.10–1.35, tarsus 4.30–4.85, middle toe 1.60–1.90. *Hab.* Guatemala and southern Mexico, north to Vera Cruz, Tehuantepec, and Mazatlan. **U. ridgwayi** GURNEY. **Mexican Urubitinga.**[2]

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[1] *Falco urubitinga* GMEL., S. N. i. 1788, 265. *Falco zonurus* SHAW, Gen. Zool. vii. 1809, 62. *Urubitinga zonura* SCL., Trans. Zool. Soc. Lond. 1858, 262.

[2] *Urubitinga zonura β.* ——? RIDGW., Bull. U. S. Geol. & Geog. Surv. Terr. ii. No. 2, 1876, 169. *Urubitinga ridgwayi* GURNEY, List Diurn. B. Prey, 1884, 77, 148.

a^2. Tarsus 3.50 or less; upper tail-coverts in adult black barred or tipped with white.

Adult: Uniform black, with a chalky or glaucous cast in certain lights; upper tail-coverts narrowly tipped with white; tail black, the tip and base white, and crossed at about the middle by a broad band of white of variable width. *Young:* Above brownish black, varied by ochraceous or rusty edgings and spots; head, neck, and lower parts pale ochraceous, striped with brownish black; thighs barred with the same; tail crossed by about seven narrow oblique bands of black and whitish, of variable relative width. *Downy young:* "Covered with dense woolly down, nearly white on head and breast, passing into grayish posteriorly upon the head, throat, sides of breast, tibiæ, and back." (MEARNS.) *Male:* Length about 21.50, wing 13.15–14.90, tail 7.90–9.75, culmen 1.00–1.05, tarsus 3.20–3.40, middle toe 1.60–1.70. *Female:* Length 20.00–22.50, wing 14.25–16.00, tail 9.25–11.00, culmen 1.05–1.10, tarsus 3.00–3.50, middle toe 1.65–1.80. *Nest* in large trees. *Eggs* 2–3, 2.32 × 1.88, plain white. *Hab.* Tropical America in general, north to southern Arizona.

345. **U. anthracina** (LICHT.). **Mexican Black Hawk.**

GENUS **ASTURINA** VIEILLOT. (Page 223, pl. LXVIII., fig. 1.)

Species.

a^1. *Adult* with upper parts very indistinctly barred, or almost uniform. *Young,* with thighs distinctly barred with dusky, and lighter tail-bands grayish brown.

Adult: Above deep ash-gray, the top of head and hind-neck with fine blackish shaft-streaks, the wing-coverts with indistinct paler bars; upper tail-coverts plain white; tail black, tipped with grayish or white, and crossed by two to three narrow bands of white, the anterior one narrower and more or less interrupted; quills black, margined at tips with whitish; lower parts white, everywhere, except on lower tail-coverts, very regularly barred with deep cinereous, these bars narrower, and the white interspaces correspondingly wider, on flanks and abdomen. *Young:* Above dark brown, the head and neck streaked, the middle wing-coverts and greater portion of outer webs of scapulars irregularly spotted, with ochraceous or buffy (usually of a pinkish cast); upper-tail-coverts white, marked near tips with one or two small spots of dusky; tail grayish brown, tipped with paler (the extreme tip usually whitish), and crossed by six or seven narrow bands of black, these becoming gradually, but decidedly, smaller toward the base; lower parts white, more or less tinged (especially on sides and under wing-coverts) with pinkish buff, the breast, belly, and sides with large tear-shaped or wedge-shaped stripes or longitudinal spots of blackish, the thighs narrowly barred with the same. Length about 16.00–18.00, wing 9.50–11.70, tail 6.70–8.20, culmen .75–1.00, tarsus 2.50–2.85, middle toe 1.35–1.75. *Nest* in trees. *Eggs* 2–3, 2.00 × 1.61, white, usually very faintly and sparsely (adventitiously?) stained with pale brownish. *Hab.* Middle America, south to Panama, north to southern border of United States, straggling as far as southern Illinois.

346. **A. plagiata** SCHLEG. **Mexican Goshawk.**

*a*². *Adult* with upper parts (including head and neck) very distinctly barred with grayish white. *Young* with thighs plain white or buffy, and lighter tail-bands whitish.

A. nitida (LATH.). **South American Goshawk.**[1]

GENUS ARCHIBUTEO BREHM. (Page 223, pl. LXIX., fig. 1.)

Species.

*a*¹. Bill small and weak, the width of gape (from corner to corner of mouth) only 1.35–1.45.

Adult, normal phase: Head and neck whitish, streaked with dusky; rest of upper parts irregularly varied with white, grayish, and dusky (the lighter tints predominating), usually mixed, more or less, with rusty or ochraceous; rump with dusky prevailing; upper tail-coverts and basal portion of tail (more or less extensively—sometimes for more than half its length) white; terminal portion of tail crossed by a broad subterminal band of grayish or dusky, and, anterior to this, usually by several narrower, irregular, or sometimes broken bands; quills dusky grayish, more or less distinctly banded with darker, their inner webs, however, immaculate anterior to their emargination; lower parts chiefly whitish, but this spotted or otherwise varied, chiefly on breast, by dusky, the thighs sometimes tinged with ochraceous or rusty. *Young, normal phase:* Very much like adult, but terminal or subterminal portion of tail plain grayish brown, the basal portion plain whitish; lower parts whitish or buffy, crossed over belly, flanks, and anal region by a very broad belt or transverse area of uniform deep brownish or dusky. *Downy young:* Plain grayish white. *Male:* Length about 19.50–22.00, wing 15.75–16.80, tail 9.00–10.00. *Female:* Length about 21.50–23.50, wing 16.15–18.00, tail 9.00–11.00.

*b*¹. Averaging lighter in color, with less (often with none) of ochraceous or rusty; rarely melanistic. *Hab.* Northern portions of eastern hemisphere.

A. lagopus (BRÜNN.). **Rough-legged Hawk.**[2]

*b*². Averaging darker in color, with more of ochraceous or rusty; frequently melanistic, some specimens being entirely deep black, with the exception of forehead, inner webs of quills (anterior to emarginations), and more or less distinct, usually broken, narrow bands across basal portion of tail, which are whitish. (NOTE.—This

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[1] *Falco nitidus* LATH., Index Orn. i. 1790, 40. *Asturina nitida* BONAP., Consp. i. 1850, 30.

[2] So far as evidence to date tends to show, the typical form of this species, if a distinctively American race be recognized, must be expunged from the list of North American birds.

condition affects both old and young, and is connected with the normal plumage by a series of specimens possessing, in every possible degree, intermediate characters.) *Nest* variously situated. *Eggs* 2–3, 2.22 × 1.77, white, buffy white, or pale buffy, usually more or less marked (sprinkled, spotted, or blotched) with brown. *Hab.* Whole of North America, breeding chiefly north of United States.................... 347*a*. **A. lagopus sancti-johannis** (Gmel.).
American Rough-legged Hawk.

*a*². Bill much larger and stronger, and broader at base, the width of gape (measured from corner to corner of mouth) 1.70–1.90.

Adult, normal phase: Upper parts generally and thighs ferruginous, the former streaked, the latter barred, with dusky; secondaries and quills plumbeous, the latter with a hoary cast; tail white, washed with pale ash-gray, more or less stained, usually longitudinally, chiefly along edges of feathers, with light rusty, and sometimes crossed near tip by an indistinct subterminal bar or narrow band of dusky; lower parts (except thighs) pure white, sometimes slightly streaked with dusky. *Young:* Above grayish brown, the feathers edged with rusty or ochraceous; thighs white, more or less spotted with dark brownish or dusky; tail with basal third (approximately) white (inner webs wholly white), the rest brownish gray, usually with several, more or less distinct, darker narrow bands. *Melanistic phase (adult):* General color deep chocolate-brown, more or less varied above by rusty spotting and edgings; lower parts mixed rusty and chocolate, either tint prevailing; tail as in normal phase. *Male:* Length about 22.50, wing 15.90–17.00, tail 9.50–10.50. *Female:* Length about 24.00, wing 17.00–18.80, tail 10.50–11.00. *Nest* usually in trees. *Eggs* 2–3, 2.50 × 1.93, white, or buffy white, usually more or less spotted, blotched, or clouded with brown or grayish purple (or both). *Hab.* Western United States, east to across Great Plains (occasionally to Illinois), north to the Saskatchewan, south into Mexico.
348. **A. ferrugineus** (Licht.). **Ferruginous Rough-leg.**

Genus **AQUILA** Brisson. (Page 223, pl. LXIX., fig. 2.)

Species.

Adult: Nearly uniform dark brown, the lanceolate feathers of hind-neck and feathers of tarsus of a paler or more tawny hue; quills black; tail blackish, more or less clouded, or very irregularly banded, with grayish. *Young:* Similar to adult, but basal half to two-thirds of the tail plain white, the feathers of breast, etc., white beneath surface, and feathers of tarsi paler (sometimes nearly white). *Male:* Length about 30.00–35.00, extent about 6½–7 feet; wing 23.00–24.70, tail 14.00–15.00, culmen 1.50–1.62, tarsus 3.65–3.80, middle toe 2.40–2.80. *Female:* Length about 35.00–40.00, extent about 7–7½ feet, wing 25.00–27.00, tail 15.00–16.00, culmen 1.68–1.85, tarsus 4.15–4.25, middle toe 2.55–2.80. *Nest* usually on cliffs, but sometimes on trees. *Eggs* 2–3, 2.95 × 2.28, oval or rounded-ovate, whitish, usually speckled, spotted, blotched, or clouded with brown and purplish gray (rarely immaculate). *Hab.* Northern portions of northern hemisphere, chiefly in mountainous regions.................................. 349. **A. chrysaëtos** (Linn.). **Golden Eagle.**

Genus THRASAËTUS Gray. (Page 223, pl. LXX., fig. 1.)

Species.

Adult: Prevailing color of upper parts, with chest, black, the upper parts usually more or less mottled or marbled with gray; head and neck grayish, darker on the crest, paler on throat; tail broadly banded with black and mottled ashy, the bands of the latter color about four in number; lower parts, posterior to chest, pure white, the thighs, and sometimes other portions, narrowly barred with black. *Young:* Above light ash-gray, marbled with black, this forming about five broken bands on middle tail-feathers, but confused on other rectrices; quills mottled with dusky; head, neck, and entire lower parts white, the longer crest-feathers and the chest tinged with ash-gray. *Male:* Wing about 21.00, tail 16.00, culmen 1.80, tarsus 4.50, middle toe 2.85, hind claw 2.25. *Female:* Length about 40.00, extent about 7 feet, wing 24.50, tail 18.50, culmen 2.20, tarsus 5.00, middle toe 3.80, hind claw 3.00. *Hab.* Tropical America in general, south to Bolivia and Paraguay, north to Mexico, or, rarely, even to the mouth of the Rio Grande (and in Louisiana?). 350. **T. harpyia** (Linn.). **Harpy Eagle.**

Genus HALIÆËTUS Savigny. (Page 223, pl. LXXI., fig. 1.)

Species.

Common Characters.—*Adults* uniform dusky brown (the feathers with paler margins), the tail white; head and neck also white, or else much lighter colored than body; bill, cere, and feet deep yellow; iris pale yellow (except sometimes in *H. albicilla*). *Young:* Prevailing color dusky, mixed more or less with brown and whitish, according to age; bill and cere black; iris deep brown.

a^1. *Adult* with head and neck light grayish brown, or brownish gray, and tail-coverts dusky. *Young* with plumage largely light cinnamon-brown or isabella-color.

Adult: Head and neck light grayish brown, grayish fulvous, or brownish gray, not abruptly lighter than the body; tail white; rest of plumage dusky grayish brown (margins of feathers paler), the quills nearly black. *Young:* Prevailing color above light umber-brown, cinnamon-brown, or isabella-color, each feather with a median streak and terminal spot of blackish brown; breast broadly striped with brownish black on a brownish white and isabella-colored ground; rest of lower parts nearly plain dull isabella-brown, each feather with a median streak and terminal spot of blackish, the thighs darker and more uniform. *Downy young:* "Covered all over with dull sooty down, with long tufts of whitish down shooting through . . . here and there." (Dresser.) *Male:* Length 31.00–34.00, wing 23.00–26.00, tail 11.50–12.00, culmen 2.05–2.20, tarsus 3.30–3.80, middle toe 2.50–2.85. *Female:* Length 35.00–40.00, wing 27.80–28.00, tail 14.00–16.00, culmen 2.20–2.45, tarsus 3.50–

3.65, middle toe 2.95–3.50. *Nest* on cliffs near sea-shore. *Eggs* 2–3, 3.07 × 2.32, plain dead white. *Hab.* Northern portions of eastern hemisphere, and southeastern Greenland.

351. **H. albicilla** (Linn.). **Gray Sea Eagle.**

*a*². *Adult* with head and neck pure white, in abrupt contrast with color of body; tail-coverts also white. *Young* with plumage blackish, grayish brown, and white, without cinnamon-brown or isabella-color. *Adult:* Head, neck, tail-coverts, and tail entirely white; rest of plumage dusky grayish brown, varying to brownish black (the margins of the feathers usually paler). *Immature (second or third year):* Head and neck blackish, the lanceolate feathers of hind-neck tipped with pale brownish, all the feathers pure white beneath surface; upper parts mixed grayish brown and blackish, usually with more or less admixture of whitish; tail blackish, the inner webs of feathers more or less blotched or "spattered" with whitish; lower parts mixed white and dusky, either color predominating, according to the individual. *Young, first year:* Whole plumage nearly uniform black, the feathers of lower parts, however, with their bases white, this more or less concealed in places, producing a somewhat spotted or blotched appearance. *Downy young:* Uniform sooty gray. *Nest* on tall trees, usually near lakes or rivers, sometimes on cliffs. *Male:* Length 30.00–35.00, extent about 7 feet, wing 20.00–25.90, tail 11.00–15.25, culmen 1.85–2.25, tarsus 2.65–3.40, middle toe 2.35–2.90, hind claw 1.68–1.90. *Female:* Length 34.00–43.00, extent about 7 to 8 feet, wing 23.50–28.00, tail 12.50–16.00, culmen 1.90–2.35, tarsus 3.25–3.70, middle toe 2.55–3.10, hind claw 1.60–2.00. *Nest* usually on large trees. *Eggs* 2–3, 2.90 × 2.27, plain white. *Hab.* Whole of North America, and across Aleutian chain to Commander Islands, Kamtschatka.

352. **H. leucocephalus** (Linn.). **Bald Eagle.**

Genus **THALASSOAËTUS** Kaup.[1] (Page 223, pl. LXXI., fig. 2.)

Species.

Adult: General color dark grayish brown, the forehead, lesser and middle wing-coverts, thighs, rump, tail-coverts, and tail, pure white; lanceolate feathers of hind-neck pale grayish brown, with lighter edges; bill, cere, and feet intense yellow in life; iris pale yellow. *Young:* Entirely dusky brownish, or with more or less admixture of white, according to age, on those portions which are white in adult; bill more or less obscured with dusky. *Male:* Length 37.60–38.00, extent 87.50, wing 23.25, tail 13.60 (graduated for 4.10), culmen 2.45. *Female:* Length about 41.00, extent 93.00, wing 24.00–26.00, tail 14.25, culmen 2.60–2.75, hind claw 1.95. *Downy young:* Uniform smoky brownish gray. *Hab.* Sea-coasts and larger rivers of Kamtschatka and borders of Okhotsk Sea, south, in winter, to Japan; occasional or accidental in Aleutian Islands?

T. pelagicus (Pall.). **Kamtschatkan Sea Eagle.**[2]

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[1] *Thalassoaëtus* Kaup, Class. Säug. Vög. 1844, 123. Type, *Aquila pelagica* Pall.

[2] *Aquila pelagica* Pall., Zoog. Rosso-As. i. 1826, 343, pl. 1. *Thalassoaëtus pelagicus* Kaup, Mus. Senck. iii. 1846, 261.

GENUS **FALCO** LINNÆUS. (Page 224, pl. LXXII., figs. 1–5; pl. LXXIII., figs. 1–3.)

Species.

*a*¹. Only one quill (the outermost) with inner web emarginated near tip; first quill longer than fourth.

  *b*¹. Tarsus decidedly longer than middle toe (without claw); first quill shorter than third.

    *c*¹. Tarsus densely feathered in front and on sides for the upper two-thirds, the edges of the feathering meeting on the posterior side. *Nest* usually on cliffs. *Eggs* 2–4, about 2.30 × 1.75, varying from pale cinnamon or tawny to buffy, more or less distinctly sprinkled, speckled, or marbled with deeper cinnamon-brown—sometimes almost uniformly cinnamon-color. (Subgenus *Hierofalco* CUVIER.)

      *d*¹. Lower tail-coverts immaculate white, the thighs also usually immaculate; prevailing color of whole plumage white. *Adult:* Top of head and hind-neck usually narrowly streaked with dusky, but often immaculate; rest of upper parts more or less barred, or transversely spotted, with slate-dusky; lower parts usually immaculate, or without well-defined markings. *Young:* Upper parts with longitudinal spots or stripes of dusky (this less slaty than in adult); lower parts usually distinctly striped. *Male:* Length about 21.00–22.50, wing 14.00–14.75 (14.49), tail 8.50–9.50 (8.94), culmen .90–.98 (.92), tarsus 2.30–2.50 (2.43), middle toe 1.95–2.05 (1.98). *Female:* Length about 23.00–24.00, wing 15.50–16.50 (16.00), tail 9.00–10.00 (9.49), culmen .95–1.08 (1.03), tarsus 2.30–2.50 (2.47), middle toe 2.05–2.15 (2.09). *Eggs* 2.26 × 1.27. *Hab.* Circumpolar regions, breeding in Greenland, northeastern (and other?) portions of Arctic America, Commander Islands, etc.

353. **F. islandus** BRÜNN. **White Gyrfalcon.**

      *d*². Lower tail-coverts always more or less marked with dusky; upper parts with little if any white, except, sometimes, on top of head and hind-neck. *Adult* with upper parts banded with dusky and bluish gray (sometimes uniform dusky anteriorly), the flanks and thighs barred, banded, or transversely spotted with dusky. *Young* without transverse bars on upper parts (except sometimes on tail), and lower parts with all the markings longitudinal.

        *e*¹. Lighter colored: Top of head much streaked with white, often with white prevailing, the lighter tail-bands usually whitish and nearly as broad as the darker interspaces. *Adult,* with anterior upper parts everywhere more or less distinctly barred with very pale grayish, grayish white, or buffy whitish, these lighter bars sometimes nearly equal in width to the darker ones; darker and lighter bands on tail usually very sharply contrasted, the former often slate-gray, the latter pale ash-gray or dull whitish; flanks and thighs never very heavily banded or spotted with slaty, but always more or less marked with this color. *Young:* Dark stripes of lower parts usually decidedly narrower than white interspaces; upper parts in general usually much spotted with whitish or light buffy, in addition to the lighter margins (often conspicuous) to the feathers; outer webs of quills more or less distinctly spotted with whitish toward base. *Male:* Length about 20.00–21.00, wing 13.40–15.00 (14.10), tail 8.00–9.30 (8.51), culmen .88–.98 (.90), tarsus 2.10–2.65 (2.40), middle toe 1.80–2.20 (1.96). *Female:* Length about 22.00–24.50, wing 15.25–16.50 (15.76), tail 9.10–10.50 (9.72), culmen .95–1.10 (1.01), tarsus 2.30–2.60 (2.46), middle toe 1.98–2.15 (2.08). *Eggs* 2.37 × 1.72. *Hab.* Extreme northern portions of Europe (except Scandinavia), Asia, and North America, including Iceland and southern Greenland; south, in winter, to northern border of United States.

354. **F. rusticolus** (Linn.). **Gray Gyrfalcon.**

e^2. Darker colored: Top of head usually with dusky prevailing, often uniform dusky, lighter tail-bands bluish gray, and usually narrower than dusky interspaces. *Adult* with anterior upper parts (back, scapulars, and wing-coverts) rather indistinctly barred with bluish gray, often nearly plain dusky; flanks heavily banded or spotted with dusky, and thighs heavily barred with slaty (the white ground-color tinged with bluish gray posteriorly). *Young:* Dark stripes of lower parts usually about equal in width to white interspaces, sometimes much broader (under parts sometimes plain dusky); upper surface of tail never (?) continuously banded with whitish, sometimes almost plain, or, if barred at all, the bars interrupted, much narrower than the dark interspaces, and never (?) approaching white in color; upper parts usually plain grayish brown, the feathers more or less distinctly margined with paler, but usually with little if any whitish spotting.

f^1. Lower parts with white prevailing, or at least equal in extent to the dusky. *Male:* Wing 13.35–14.25 (13.54), tail 8.00–9.00 (8.49), culmen .86–.93 (.90), tarsus 2.30–2.50 (2.35), middle toe 1.90–2.00 (1.96). *Female:* Wing 15.25–16.00 (15.52), tail 9.00–10.50 (9.82), culmen 1.00–1.10 (1.03), tarsus 2.25–2.65 (2.48), middle toe 2.05–2.15 (2.10). *Eggs* 2.34 × 1.77. *Hab.* Northern Europe and

Arctic America, from northern Labrador and coasts of Hudson's Bay to Alaska........ 354*a*. **F. rusticolus gyrfalco** (LINN.). **Gyrfalcon.**

*f*². Lower parts with dusky prevailing, sometimes entirely dusky, except on lower tail-coverts, which are always (?) spotted with white. *Male:* Wing 14.00–14.60 (14.20), tail 8.20–9.40 (8.64), culmen .86–.95 (.88), tarsus 2.38–2.45 (2.41), middle toe 1.90–2.00 (1.91). *Female:* Wing 14.75–16.25 (15.89), tail 9.60–10.00 (9.85), culmen .98–1.05 (1.02), tarsus 2.55–2.70 (2.62), middle toe 2.05–2.15 (2.11). *Eggs* 2.26 × 1.77. *Hab.* Coast of Labrador; south, in winter, to Maine, Canada, and New York...........354*b*. **F. rusticolus obsoletus** (GMEL.). **Black Gyrfalcon.**

*c*³. Tarsus feathered for not more than upper half, the posterior side almost wholly naked. (Subgenus *Gennaia* KAUP.[1])

Top of head grayish brown, streaked with dusky; outer web of tail-feathers without distinct lighter spots (usually quite plain), and outer webs of quills without trace of spots; secondaries with lighter spots on outer webs; under parts and nuchal collar white, the flanks heavily spotted or blotched with dusky, the under tail-coverts sparsely spotted with same. *Adult male:* Above pale grayish brown (usually tinged more or less with rusty), indistinctly but broadly barred with pale clay-color or dull grayish buffy anteriorly and pale bluish gray posteriorly. *Adult (?) female:* Above grayish brown, without distinct or well-defined lighter bars, but feathers margined with pale rusty brown or dull whitish, both the ground-color and these edgings paler on posterior portions; tail tipped with buffy whitish, the feathers edged with a paler tint of the ground-color. *Young (both sexes):* Above grayish brown, the feathers distinctly margined with light rusty; lower parts pale buffy or buffy whitish, with broader dusky streaks, the dusky flank-patch larger and more uniform than in the adult, and the axillars unbroken dusky. *Young in first summer:* Similar to the preceding stage, but ground-color above darker, with rusty margins to feathers more distinct, the ground-color of the lower parts light ochraceous or creamy buff. *Male:* Length about 17.00–18.00 (weight about 1½ pounds), wing 11.60–12.50, tail 6.40–7.50, culmen .70–.75, tarsus 1.85–2.15, middle toe 1.60–2.00. *Female:* Length about 18.50–20.00 (weight sometimes 4½ pounds), wing 13.25–14.30, tail 8.00–9.00, culmen .85–.90, tarsus 2.05–2.40, middle toe 1.85–2.15. *Nest* usually on cliffs. *Eggs* 2–5,

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[1] *Gennaia* KAUP, Isis, 1847, 69. Type, *Falco jugger* GRAY.

2.08 × 1.63, creamy white, vinaceous-white, or pale vinaceous-buffy, sprinkled, speckled, or irregularly spotted with madder-brown. *Hab.* Western United States, east to eastern border of Great Plains (occasionally to Illinois), south into Mexico.

355. **F. mexicanus** Schleg. **Prairie Falcon.**

b^2 Tarsus not decidedly longer than middle toe (without claw), often shorter; first quill longer than third.

c^1. First and second quills equal and longest; second with inner web slightly sinuated near tip; adult and young very different in color, the latter with stripes instead of bars beneath, and without bars on upper parts. *Nest* on cliffs or in hollows of giant trees. *Eggs* 3–5, 2.20, or less, × 1.70, or less, varying in color from buffy to deep cinnamon- and hazel-brown, usually more or less broken into spotting or blotching, but sometimes nearly plain; spots varying from hazel- to rich madder-brown. (Subgenus *Rhynchodon* Nitzsch.)

d^1. *Adult* with top of head sooty black, or deep black, appreciably or decidedly darker than back; chest creamy buff, buffy white, or pure white, often immaculate, never very heavily spotted with blackish. *Young* with lower parts ochraceous or buffy striped with dusky, the feathers of upper parts bordered with buffy, ochraceous, or rusty. *Male:* Length 15.50–18.00, wing 11.30–13.00, tail 6.00–7.50, culmen .75–.80, tarsus 1.60–1.90, middle toe 1.78–2.05. *Female:* Length about 18.00–20.00, wing 13.00–14.75, tail 6.90–9.00, culmen .85–1.00, tarsus 1.95–2.20, middle toe 1.95–2.30.

e^1. *Adult* with chest usually distinctly streaked with, or marked with tear-shaped spots of, blackish. *Young* paler, with ground-color of lower parts pale buffy or buffy whitish. *Hab.* Europe and portions of Asia.

F. peregrinus Tunst. **Peregrine Falcon.**[1]

e^2. *Adult* with chest usually immaculate. *Young* more deeply colored, with ground-color of lower parts frequently deep ochraceous. *Eggs* 2.06 × 1.61. *Hab.* Whole of America, south as far, at least, as Chili; eastern Asia?

356. **F. peregrinus anatum** (Bonap.). **Duck Hawk.**

d^2. *Adult* with top of head dark slaty, or plumbeous-slate, uniform with back; chest heavily spotted with blackish, and dusky bars of remaining under parts very broad. *Young* with lower parts sooty black, streaked with pale buffy or buffy white, the feathers of upper parts without rusty margins. *Male:* Wing 12.90–13.00 (12.95), tail 6.60–6.90 (6.75), culmen .80–.88 (.84), tarsus 1.88–2.00 (1.94), middle toe 1.88–1.95 (1.91). *Female:* Wing 14.50–14.75 (14.66), tail 7.70–8.00 (7.84), culmen .95–1.00 (.96), tarsus 2.00–2.25 (2.16), middle toe 2.05–2.21 (2.13). *Hab.*

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[1] *Falco peregrinus* Tunst., Orn. Brit. 1771, 1.

Aleutian Islands, west to Commander Islands, and south along Pacific coast to Oregon.

356*a*. **F. peregrinus pealei** Ridgw. **Peale's Falcon.**

c^2. Second quill longest, but first longer than third; second with inner web not appreciably sinuated near tip; adult and young not very different in plumage, the latter not distinctly striped beneath; size small (wing not exceeding 12.00—usually much less). (Subgenus *Neofalco* Ridgw.[1])

d^1. Wing 9.50, or more; under tail-coverts ochraceous, or white and rufous, with large transverse spots of black; upper tail-coverts barred with white or pale ashy. *Adult:* Above plumbeous black, distinctly bordered with bluish plumbeous; throat and chest immaculate white centrally and anteriorly, rufous laterally and posteriorly; thighs plain rufous. *Young:* Above uniform dull black, the feathers sometimes slightly margined with rusty; throat and chest varying from white to ochraceous or rufous, this always deepest laterally and posteriorly; thighs sometimes thickly spotted transversely with blackish. *Male:* Length about 12.50, wing 9.50–9.90, tail 5.40–5.50, culmen .72, tarsus 1.40–1.55, middle toe 1.75. *Female:* Length about 15.00, wing 10.90–12.00, tail 6.00–6.25, culmen .90, tarsus 1.50–1.60, middle toe 1.85–2.10. *Hab.* Tropical America in general (except West Indies), north to southern Mexico.

F. deiroleucus Temm. **Temminck's Falcon.**[2]

d^2. Wing not more than 9.00; under tail-coverts deep rufous, usually immaculate, but sometimes slightly barred with white and dusky; upper tail-coverts indistinctly barred with plumbeous. *Adult:* Above plumbeous-black, the feathers with bluish plumbeous tips and edges, and, on rump, etc., more or less distinctly barred with same; throat and chest buffy whitish, becoming deeper buffy or ochraceous posteriorly. *Young:* Similar to adult, but upper parts without plumbeous bars or tips, and sometimes having a slight brownish cast, the feathers usually with indistinct rusty margins; throat and chest deep ochraceous, the latter usually with a few dusky streaks. *Male:* Length about 9.50–10.00, wing 7.20–8.80, tail 5.00–5.50, culmen .58, tarsus 1.25–1.50, middle toe 1.15–1.30. *Female:* Length about 11.00, wing 8.50–9.00, tail 5.00–5.50, culmen .58, tarsus 1.48–1.55, middle toe 1.30–1.40. *Hab.* Tropical America in general (except West Indies), north to northern Mexico (Nuevo Leon and Mazatlan).

F. albigularis Daud. **White-throated Falcon.**[3]

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[1] New subgenus; type, *Falco albigularis* Daud.

[2] *Falco deiroleucus* Temm., Pl. Col. i. 1825, pl. 348.

[3] *Falco albigularis* Daud., Traité, ii. 1800, 131.

a^2. Two outer quills with inner webs emarginated near tip; first quill shorter than fourth.

b^1. Tarsus not decidedly longer than middle toe; basal segment of toes covered with small hexagonal or roundish scales.

Adult males: Bluish gray above, with blackish shaft-streaks; hind-neck spotted or mixed with whitish and buffy or ochraceous; quills dusky; tail crossed by a greater or less number of blackish bands, and tipped with whitish; lower parts whitish, buffy, or light rusty, striped with brownish or dusky. *Adult females:* Brownish above, the tail usually with a greater or less number of lighter (usually narrow) bands; top of head streaked with blackish, and feathers of back and rump with shaft-streaks of the same; lower parts much as in the male, but without rusty tinge. *Young* (*both sexes*): Much like adult female, but darker, or else much tinged above with ochraceous or rusty. (Subgenus *Æsalon* KAUP.)

c^1. Middle tail-feathers of adult male crossed by about six imperfect, mostly concealed, blackish bands, besides the broad and continuous subterminal one; that of adult female and young crossed by about eight light bands, including terminal band. *Adult male* with closed tail showing one black band, this a broad subterminal one; inner web of longest quill with about ten white spots; hind-neck, breast, and sides more deeply rusty than thighs; dark markings on breast linear, and streaks on cheeks crowded into a distinct "mustache"; length about 11.00, wing 7.60–8.00, tail 5.10–5.30, culmen .45–.50, tarsus 1.35–1.45, middle toe 1.15. *Adult female:* Tail with about eight narrow pale bands (more on lateral feathers), the first two or three concealed, however, by upper coverts; upper parts usually much spotted with a lighter tint than ground-color; length about 12.00–14.00, wing 8.60–9.00, tail 6.00–6.30, culmen .52–.55, tarsus 1.45–1.47, middle toe 1.20–1.25. *Young:* Similar to adult female, but more or less tinged with rusty, the lighter spots on upper parts more distinct. *Hab.* Europe, etc.; accidental in Greenland.

358.1. **F. æsalon** TUNST. **Merlin.**[1]

c^2. Middle tail-feathers of adult male crossed by not more than four blackish bands besides the broad subterminal one, that of female and young never with more than six light bands, including terminal one. *Adult males* with closed tail showing more than one black band; inner web of longest quill with less than ten white spots; hind-neck, breast, and sides less tinged with rusty than thighs; markings on breast broad, stripe-like, and streaks on cheeks not crowded into a distinct "mustache."

d^1. Middle tail-feathers with not more (altogether) than four blackish or five lighter bands; outer webs of quills mostly destitute of distinct grayish, buffy, or ochraceous spots, and general color of plumage darker.

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[1] *Falco æsalon* TUNST., Orn. Brit. 1771, 1.

e^1. Inner webs of quills distinctly barred or transversely spotted with whitish; tail-bands distinct, in both sexes, at all stages. *Adult female* and *young* with whitish or buffy prevailing on lower parts. *Male:* Length about 10.00–11.00, wing 7.40–7.80 (7.65), tail 4.65–5.20 (4.87), culmen .48–.50, tarsus 1.30–1.40, middle toe 1.15–1.25. *Female:* Length about 12.50–13.25, wing 8.35–8.60 (8.50), tail 5.30–5.50 (5.38), culmen .55–.60, tarsus 1.55–1.60, middle toe 1.35. *Nest* very variously situated (in cavity of cliff or in hollow of tree, on branches of trees, etc.). *Eggs* 2–4, 1.59 × 1.24, usually more or less spotted or blotched with deep rusty brown, hazel-brown, or cinnamon, on a paler (sometimes buffy whitish) ground-color. *Hab.* Whole of North America, breeding chiefly north of United States; south, in winter, to West Indies, Middle America, and northern South America....... 357. **F. columbarius** Linn. **Pigeon Hawk.**

e^2. Inner webs of quills not distinctly barred or spotted, and tail-bands, except whitish tip, indistinct, or obsolete. *Adult female* and *young:* Above plain blackish brown; lower parts very heavily marked with dusky. (*Adult male unknown.*) *Male:* Wing 7.35–7.70, tail 5.25–5.60, culmen .48–.50, tarsus 1.30–1.45, middle toe 1.20. *Female:* Wing 8.25–8.50, tail 5.70–5.80, culmen .55–.60, tarsus 1.50–1.60, middle toe 1.35–1.40. *Hab.* Northwest coast, from northern California (in winter) to Sitka.

357*a*. **F. columbarius suckleyi** Ridgw. **Black Merlin.**

d^2. Middle tail-feathers crossed by (altogether) five darker and six lighter bands; outer webs of quills distinctly spotted with light grayish in adult male, and buffy or ochraceous in adult female and young, and general plumage paler. *Adult male:* Above pale bluish gray (top of head usually more or less tinged with light rusty or ochraceous); tail crossed, on middle feathers, by five blackish and six light bluish gray (or five bluish gray and one white—terminal) bands, the lighter ones often clouded or mixed with white; outer webs of quills distinctly spotted with light grayish; wing 7.70–8.05 (7.94), tail 4.90–5.30 (5.11), culmen .50–.60, tarsus 1.42–1.55, middle toe 1.20–1.30. *Adult female:* Above rather light earthy brown, more or less distinctly barred or transversely spotted with a lighter shade; tail crossed, on middle feather, by six very distinct and entirely continuous narrow bands of buffy whitish; secondaries distinctly banded with ochraceous, and outer webs of quills distinctly spotted with a lighter tint of the same; length about 12.00–13.50, wing

8.80–9.10 (8.95), tail 5.70–6.30 (5.92), culmen .55–.60, tarsus 1.30–1.40, middle toe 1.15–1.25. *Young* (*both sexes*): Similar to adult female, but more decidedly buffy below, and upper parts more or less tinged with rusty. *Egg* (single specimen) 1.52 × 1.22, buffy white, handsomely marbled and irregularly spotted with madder-brown. *Hab.* Interior of North America, breeding from Rocky Mountains of Colorado (?) northward, and straggling west to Pacific coast; south, in winter, to Texas and Arizona (probably into Mexico).

358. **F. richardsonii** Ridgw. **Richardson's Merlin.**

*b*². Tarsus decidedly longer than middle toe; basal phalanx of toes with transverse scutellæ.

*c*¹. Bill robust, the length of the cere on top equal to about one-third the culmen; transverse scutellæ on basal phalanx of toes large and almost uninterrupted; second and third quills longest, first equal to or shorter than fourth; sexes essentially alike in color, and young not very different from adults; size medium (wing more than 9.00). (Subgenus *Rhynchofalco* Ridgw.)

Adult: Above plain bluish gray or plumbeous, the secondaries broadly tipped with whitish; tail darker towards end, tipped with white, and crossed by about eight narrow bands of the same; a broad stripe behind eye, middle of ear-coverts, with entire chin, throat, and chest, immaculate white, the postocular stripe changing to orange-rufous on occiput, where the two of opposite sides are confluent; sides and flanks slaty blackish, narrowly barred with white; thighs and lower tail-coverts light rufous, or rusty ochraceous. *Young:* Similar to adult, but colors duller, the gray above less bluish, rufous or ochraceous of thighs, etc., paler, the chest more or less buffy and striped with dusky. *Male:* Length about 15.00, wing 9.20–10.70, tail 6.30–8.00, culmen .60–.68, tarsus 1.70–1.85, middle toe 1.35–1.50. *Female:* Length about 17.00–18.00, wing 11.00–11.60, tail 7.80–8.80, culmen .71–.80, tarsus 1.80–2.00, middle toe 1.55–1.70. *Nest* on low trees or bushes (usually yuccas or cacti). *Eggs* 2–4 (?), 1.77 × 1.38, dull white or buffy white, thickly speckled and irregularly spotted with vandyke-brown. *Hab.* Tropical America in general (except West Indies), north to southern Texas and New Mexico.

359. **F. fusco-cœrulescens** Vieill. **Aplomado Falcon.**

*c*². Bill small, the length of the cere on top less than one-fourth the chord of the culmen; transverse scutellæ interrupted at extreme lower part of tarsus and extreme base of toes; tarsus much longer than middle toe (without claw); sexes very different in color, and young of both sexes (in American species) essentially like adults. *Nest* in holes, usually in dead trees. *Eggs* 2–5, 1.45, or less, × 1.16, or less, varying from pure white, with few markings (very rarely quite immaculate), to deep cinnamon-buff (usually an intermediate shade) more or less sprinkled, speckled, spotted, or blotched with rusty brown or cinnamon. (Subgenus *Tinnunculus* VIEILL.) (32.)

Adult males with tail chestnut-rufous, crossed by a broad subterminal black band (sometimes with more or less distinct narrower bands anterior to this, especially on lateral feathers), and tipped with whitish or rufous; wing-coverts grayish blue, or plumbeous, usually more or less spotted with black; sides of head with one or two (usually two) black obliquely vertical stripes, the enclosed space whitish; lower parts varying from pure white (the throat and under tail-coverts always white), through shades of buff and ochraceous, to deep rufous, with or without black spots. *Young males* similar to adults, but feathers of upper surface more or less distinctly margined with whitish, the colors generally more suffused. *Adult females:* Tail rusty, crossed by numerous narrow bands or bars of dusky; wing-coverts also ferruginous, barred with dusky, like back and scapulars; head marked as in male. *Young female:* Similar to adult, but colors softer, deeper, and more blended.

d^1. Back always entirely rufous or rusty, with or without black bars or spots; breast, etc., varying from white to deep ochraceous with or without dusky markings; forehead and ear-coverts distinctly whitish.

e^1. Inner webs of quills barred entirely across with white and dusky; "mustache" across cheeks always conspicuous; no distinct white superciliary stripe.

Top of head varying from bluish gray to dark slate, the crown with or without a rufous patch. *Male:* Length about 8.75–10.60, wing 6.55–8.05 (7.16), tail 4.20–5.45 (4.73), culmen .50, tarsus 1.25–1.55, middle toe .95. *Female:* Length 9.50–12.00, wing 6.90–8.15 (7.57), tail 4.50–5.60 (5.14), culmen .50–.55, tarsus 1.40–1.45, middle toe .90–1.00. *Eggs* 1.37 × 1.14. *Hab.* Whole of temperate North America, and south (in winter only?) through Middle America to northern South America.

360. **F. sparverius** LINN. **American Sparrow Hawk.**

e^2. Inner webs of quills white, merely serrated along the shaft with dusky; "mustache" across cheeks indistinct or quite obsolete; a conspicuous white superciliary stripe.

Otherwise like *F. sparverius*, but scapulars and wing-coverts usually with fewer black markings, and lower parts usually immaculate white in male, stained or tinged with orange-rufous or salmon-color. *Male:* Wing 6.80–7.30, tail 4.90–5.20, culmen .46–.51, tarsus 1.30–1.45, middle toe .90. *Female:* Wing 7.00–7.60, tail 4.70–5.60, culmen .50–.52, tarsus 1.40, middle toe .91. *Hab.* Cuba.

361. **F. sparverioides** Vig. **Cuban Sparrow Hawk.**[1]
(Light phase.)

*d*². Back rufous only in the female and young male, plumbeous or dark bluish gray in adult male; breast, etc., deep rusty or rufous; forehead and ear-coverts dusky.

Adult male: Above, except tail, entirely dark plumbeous, or slate-gray, or else chiefly of this color; a blackish collar across hind-neck; breast and sides deep rufous, sometimes inclining to chestnut; throat grayish white, or light grayish; inner webs of quills grayish, transversely clouded or mottled with dusky. *Young male:* Similar to adult, but back and scapulars mixed with more or less of rufous, rusty of breast paler, etc. *Adult female:* Lower parts deep rusty; inner webs of quills rusty, marked with about twelve transverse bars or narrow spots of dusky. *Male:* Wing 6.90–7.10, tail 4.80–5.10, culmen .50, tarsus 1.45–1.48, middle toe .90. *Female:* Wing 7.00–7.50, tail 5.00–5.15, culmen .50, tarsus 1.35–1.40, middle toe .88–.90. *Hab.* Cuba and Haiti; accidental or casual in southern Florida.

361. **F. sparverioides** Vig. **Cuban Sparrow Hawk.**
(Dark phase.)

Genus POLYBORUS Vieillot. (Page 224, pl. LXVII., fig. 2.)

Species.

Common Characters.—Tail dull white, or pale isabella-color, narrowly barred with grayish or dusky, and crossed at end by a broad band of dark brown or blackish. *Adult:* Whole top of head, together with greater portion of body and wings, blackish, or dark brown; cheeks, neck, chest, and tail-coverts dull white or pale isabella-color; nape, back, and breast (sometimes wing-coverts and belly also) barred with whitish (or pale isabella-color) and dusky. *Young:* Plumage striped with dull brownish and dull whitish or dull buffy, the pileum plain dull brownish; tail as in adult.

*a*¹. Rump and upper tail-coverts, in adult, white (with or without bars); tail white, the narrow bars grayish, the terminal dark band 2.00, or more, wide.

*b*¹. Scapulars, breast, belly, and middle wing-coverts barred with blackish and whitish in adult, striped in young; tail-coverts barred; wing 16.00–17.70, tail 10.00–11.00, culmen 1.20–1.41, tarsus 3.70–4.70. *Hab.* South America, except northern portions. **P. tharus** (MOL.). **Caracara.**[1]

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[1] *Falco dominicensis* Gmel., Haitien Sparrow Hawk, of first edition.

b^2. Scapulars, sides, belly, and middle wing-coverts plain black in adult, plain dull brownish in young; tail-coverts plain white. *Adult:* Upper half of head, scapulars, wings, lower back, rump, belly, sides, flanks, and anal region plain dull black, or brownish black; upper back and breast black, barred with white; lower portion of head, neck (all round), chest, and tail-coverts soiled white, the chest transversely spotted with black; basal two-thirds (or more) of tail white, crossed by about 13–14 narrow bars of dusky, these growing less distinct basally; terminal zone of tail uniform black. *Young:* Black of adult replaced by dull brownish, darkest on top of head; white and dusky areas gradually blended, those portions which are barred in the adult being striped with the two colors; tail as in adult. Length 20.50–25.00, wing 14.60–16.50, tail 8.80–10.00, culmen 1.20–1.48, tarsus 3.20–3.75. *Nest* on trees, bushes, or cliffs. *Eggs* 2–4, 2.36 × 1.85; ground-color cinnamon, pale umber, brownish white, or walnut-brown, variously marked (usually blotched or stained) with deeper brown (burnt-umber, chestnut, or claret-brown). *Hab.* Middle America and northern South America, south to Guiana and Ecuador, north to southern border of United States (Florida to Lower California). 362. **P. cheriway** (JACQ.). **Audubon's Caracara.**

a^2. Rump and upper tail-coverts dull brownish buff, or light isabella-color, broadly barred with dull brown; tail brownish buff, or pale isabella-color, with broad bars of grayish brown bordered by narrower zigzag bars or lines of dusky, the terminal dark band less than 2.00 wide.

Adult: Upper half of head, lesser wing-coverts, secondaries, primary coverts, terminal portion of primaries, under side of wing (including axillars), and terminal zone of tail, plain blackish brown; ear-coverts, cheeks, and throat plain dirty whitish or pale brownish buffy; rest of plumage barred with dusky brownish and dull brownish buff or dirty brownish white. *Young:* Quills, tail, tail-coverts, head, and lesser wing-coverts much as in adult; rest of plumage more or less distinctly striped with dull brown and dirty brownish white or dull buffy, the former prevailing, and sometimes nearly uniform, on upper parts. *Downy young:* Light brownish buff, with a brown patch covering arm-wing and scapular region, and another covering top of head. Wing 15.00–16.40, tail 10.50–11.65, culmen 1.25–1.35, tarsus 3.50–3.75. *Hab.* Guadalupe Island, Lower California.......... 363. **P. lutosus** RIDGW. **Guadalupe Caracara.**

GENUS PANDION SAVIGNY. (Page 224, pl. LXX., fig. 3.)

Species.

Adult male: Above plain dusky grayish brown, the tail more grayish, narrowly tipped with white, and crossed by about six or seven narrow bands of dusky; head, neck, and entire lower parts pure white, the chest sometimes slightly blotched or spotted with brown, but usually immaculate; sides of head with a dusky stripe from lores across ear-coverts, and top of head usually more or less marked with dusky. *Adult female:* Similar to the male, but chest much more heavily spotted or blotched with brown (never immaculate). *Young:* Above blackish brown, each feather distinctly bordered terminally with white or buffy; otherwise like adult, the sexes differing in same manner. *Downy young:* Dull sooty grayish or dusky above, more or less mixed or tinged with rusty or fulvous, relieved by a broad whitish stripe down middle of back and rump; a dusky stripe on sides of head, and three others on top of head, separated by whitish stripes; hinder portion of wing whitish, anterior portion dusky; lower parts dull whitish, the chest brownish or dusky. Length 20.75–25.00, extent about 65.00, wing 17.00–21.00, tail 7.00–10.00, culmen 1.20–1.45, tarsus 1.95–2.40. *Nest* on trees near water, very bulky, composed of large sticks, etc. *Eggs* 2–4, 2.44 × 1.81, the ground-color varying from buffy white through various shades of buff to pale cinnamon, boldly spotted or blotched with rich chestnut or madder-brown and purplish gray. *Hab.* Temperate and tropical America in general, north to Hudson's Bay and Alaska.

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[1] *Falco tharus* MOL., Sp. Chil. 1782, 264, 343. *Polyborus tharus* STRICKL., Orn. Syn. 1855, 19.

364. **P. haliaëtus carolinensis** (GMEL.). **American Osprey.**

FAMILY STRIGIDÆ.—THE BARN OWLS. (Page 218.)

Genera.

(Characters same as those given for the Family).......... **Strix.** (Page 255.)

GENUS STRIX LINNÆUS. (Page 255, pl. LXXIV., fig. 1.)

Species.

Ground-color of upper parts ochraceous-yellow, this overlaid, more or less continuously, by a grayish superficial tint, finely mottled and speckled with dusky and white; quills and tail-feathers with more or less distinct, distant, dusky bands, of variable number; lower parts varying from plain snowy white to bright tawny, speckled with dusky; face varying from pure white to tawny; length 14.75–18.00, wing 12.50–14.00, tail 5.50–7.50, culmen .90–1.00, tarsus 2.25–3.00, middle toe 1.25, or more. *Nest* in hollow trees, in towers, belfries, etc. *Eggs* 5–11, 1.67 × 1.27, ovate, plain white. *Hab.* United States generally (rarer northward) and Mexico.

365. **S. pratincola** BONAP. **American Barn Owl.**

FAMILY BUBONIDÆ.—THE HORNED OWLS, ETC. (Page 218.)

(*Eggs* invariably plain white, usually oval, or broadly oval, sometimes nearly spherical.)

Genera.

a^1. Wing more than 10.00.

  b^1. Length of cere along top equal to or exceeding chord of culmen, the upper outline decidedly arched toward base.

Ear-opening immense, extending almost the entire height of the skull, the two ears conspicuously asymmetrical......... **Asio.** (Page 257.)

b^2. Length of cere along top less than chord of culmen, the upper outline not arched.

c^1. Ear-opening very large, with a distinct anterior operculum or "flap," the two ears conspicuously asymmetrical. (No ear-tufts.)

d^1. Smaller (wing 12.00–15.00, tail less than 10.00); bill larger, more exposed; at least the terminal scutella of each toe exposed; eyes larger, with irides dark brown or nearly black; feet larger, and facial disk relatively smaller........ **Syrnium.** (Page 258.)

d^2. Larger (wing 16.00–18.00, tail 12.00 or more); bill relatively much smaller, and nearly hidden by feathers; toes entirely covered with feathers; eyes relatively much smaller, with irides yellow; feet relatively much smaller, and facial disk much broader.

Scotiaptex. (Page 259.)

c^2. Ear-opening small, without anterior operculum, or "flap," the two ears not distinctly asymmetrical.

d^1. Ear-tufts very conspicuous; tail reaching beyond tip of longest lower coverts; two or three outer quills with inner webs emarginated; toes covered with short but dense feathers, the claws wholly exposed; bill exposed.................. **Bubo.** (Page 262.)

d^2. Ear-tufts rudimentary; tail not reaching beyond tips of longest lower coverts; four outer quills with inner webs emarginated; toes covered with long hair-like feathers, partly or wholly concealing the claws; bill nearly concealed by the loral feathers. (Very large; wing 15.50 to 19.00.)........ **Nyctea.** (Page 264.)

a^2. Wing less than 10.00.

b^1. Tarsus less than twice as long as middle toe, and much less than half as long as tail.

c^1. Tail more than two-thirds as long as wing, graduated. (No ear-tufts; wing about 9.00.)...................................... **Surnia.** (Page 264.)

c^2. Tail less than two-thirds as long as wing, even, or slightly rounded.

d^1. Ear-opening very large (nearly equal to height of skull), with anterior operculum or flap, the two ears conspicuously asymmetrical. (No ear-tufts; wing 5.25–7.40.)........... **Nyctala.** (Page 260.)

d^2. Ear-opening small, without anterior operculum, the two ears symmetrical.

e^1. Nostril large, oval, opening in anterior edge of cere; ear-tufts conspicuous; small (wing 5.40–7.80).

Megascops. (Page 260.)

e^2. Nostril small, circular, opening near the middle of the inflated cere; no ear-tufts; very small (wing 3.50–4.40).

f^1. Tarsus not longer than middle toe, densely feathered; tail more than half as long as wing, rounded.

Glaucidium. (Page 266.)

f^2. Tarsus longer than middle toe, scantily haired; tail less than half as long as wing, even.

Micropallas. (Page 266.)

b^2. Tarsus more than twice as long as middle toe, and about half as long as tail. (Wing 6.15–7.50).. **Speotyto.** (Page 265.)

GENUS **ASIO** BRISSON. (Page 256, pl. LXXIV., figs. 2, 3.)

Species.

a^1. Ear-tufts very conspicuous; upper parts finely mottled or vermiculated with dusky, buffy, and grayish white, the first predominating; lower parts buffy, overlaid, more or less continuously, with whitish, and marked with ragged, or "herring-bone," stripes of dusky. (Subgenus *Asio.*)

b^1. Ends of all the quills normal; toes feathered; face ochraceous.

c^1. Dusky of upper parts disposed in broad stripes, contrasting more or less conspicuously with the paler ground-color; lower parts ochraceous, conspicuously striped, but not distinctly barred, with dusky. (Size of *A. wilsonianus.*) *Hab.* Northern parts of eastern hemisphere.

A. otus (LINN.). **Long-eared Owl.**[1]

c^2. Dusky of upper parts in form of confused mottling, not contrasting conspicuously with the paler ground-color; lower parts whitish (ochraceous beneath surface), marked with irregular dusky bars which are much broader than the mesial streaks with which they are confluent; length 13.00–16.00, wing 11.50–12.00, tail 6.00–6.20, culmen .65, tarsus 1.20–1.25. *Nest*, usually the deserted one of a crow, heron, magpie, or other bird of similar size. *Eggs* 3–7, 1.57 × 1.27, ovate or ovoid. *Hab.* Whole of temperate North America, south to tablelands of Mexico.

366. **A. wilsonianus** (LESS.). **American Long-eared Owl.**

b^2. Ends of longer quills narrow, that of the first almost falcate; toes naked; face dusky or with dull grayish prevailing.

Above dusky, slightly broken by sparse mottling of yellowish white; lower parts grayish white, coarsely barred and irregularly striped with dusky; wing about 13.00, tail 6.80, culmen .90, tarsus 1.55. *Hab.* Eastern tropical America, north to eastern Mexico and Cuba.

A. stygius WAGL. **Stygian Owl.**[2]

a^2. Ear-tufts rudimentary; color (above and below) ochraceous or buffy whitish, striped, but not barred, with dark brown. (Subgenus *Brachyotus* GOULD.)

Adult: Ground-color varying (individually) from bright tawny ochraceous to buffy white, this relieved by conspicuous stripes of dark brown, those of the lower parts growing gradually narrower posteriorly, and disappearing altogether on legs and lower tail-coverts; wings irregularly varied with dusky and ochraceous, the quills with large (often partially confluent) spots of the latter; tail ochraceous or buffy, paler on outer feathers, and crossed with about five dusky bands; face blackish around eyes, the eyebrows whitish. *Young:* Above dark sepia-brown, the feathers broadly tipped with ochraceous-buff; face uniform brownish black; lower parts wholly plain pale dull buffy, tinged with smoky grayish anteriorly. Length 13.80–16.75, wing 11.80–13.00, tail 5.80–6.10, culmen .60–.65, tarsus about 1.75. *Nest* on ground, in open situations, usually among bushes or tall grasses. *Eggs* 3–7, 1.53 × 1.22. *Hab.* Entire western hemisphere, except Galapagos and part of West Indies; also, nearly throughout eastern hemisphere, excepting Australia, etc.

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[1] *Strix otus* LINN., S. N. ed. 10, i. 1758, 92. *Asio otus* LESS., Man. d'Orn. i. 1828, 116.

[2] *Nyctalops stygius* WAGL., Isis, 1832, 1221. *Asio stygius* STRICKL., Orn. Syn. i. 1855, 207.

367. **A. accipitrinus** (Pall.). **Short-eared Owl.**

GENUS SYRNIUM SAVIGNY. (Page 256, pl. LXXVII., fig. 2.)

Species.

COMMON CHARACTERS.—Above deep umber- or sepia-brown, barred or spotted with buffy or whitish; face dull grayish or dingy grayish white, usually with narrow darker concentric rings; quills spotted with pale brown and whitish, and tail crossed by about six to eight narrow bands of the same; lower parts whitish (buffy or ochraceous beneath surface), barred and striped, or spotted, with brown; iris brownish black; bill yellowish.

a^1. Head, neck, and breast broadly barred with deep brown and whitish, or buffy; sides, flanks, and other posterior lower parts striped with deep brown.

  b^1. Top of toes feathered, except on terminal portion.

    c^1. Face without darker concentric rings; colors deep sepia-brown and grayish white, the latter with little or none of ochraceous on lower parts, where the stripes are very dark, almost blackish, brown; wing 14.80, tail 9.00, culmen .95. *Hab.* Eastern Mexico (Mirador, etc.).

S. nebulosum sartorii Ridgw. **Mirador Barred Owl.**[1]

    c^2. Face with more or less distinct darker concentric rings; colors deep umber-brown and buffy whitish (deeper buff, or ochraceous, beneath surface). *Young:* Head, neck, and entire lower parts broadly barred with rather light umber-brown and pale buffy and whitish, the brown and lighter bars about equal in width; back, scapulars, and wing-coverts similarly marked, but the bars broader, the brown ones of a deeper tint, and the terminal portion of each feather broadly white, producing a spotted appearance; quills, secondaries, and tail-feathers (when grown out) as in adult. Length 19.75–24.00, wing about 13.00–14.00, tail about 9.00. *Nest* in trees (usually in hollows). *Eggs* 2–3, 1.94 × 1.67. *Hab.* Eastern North America, north to more southern British Provinces; south to Georgia and northern Texas........... 368. **S. nebulosum** (Forst.). **Barred Owl.**

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[1] *Syrnium nebulosum,* var. *sartorii,* Ridgw., in Hist. N. Am. B. iii. 1874, 29. (This is possibly a distinct species from *S. nebulosum.*)

b^2. Top of toes naked, except a small pointed strip on outer side of basal joint of middle toe.

Plumage essentially as in *S. nebulosum*, but averaging slightly darker. *Hab.* Gulf States, from Florida (and lower Georgia?) to Texas.

368*a*. **S. nebulosum alleni** Ridgw. **Florida Barred Owl.**

a^2. Head and neck deep brown, marked with roundish white spots; whole of lower parts barred and transversely spotted with brown.

Length about 19.00, wing 12.00–13.50, tail 8.50–9.00, culmen .90. *Egg* 2.05 × 1.80. *Hab.* Highlands of Mexico, north to New Mexico, Arizona, California, and Lower California.

369. **S. occidentale** Xantus. **Spotted Owl.**

Genus **SCOTIAPTEX** Swainson.[1] (Page 256, pl. LXXVII., fig. 3.)

Species.

Common Characters.—Dusky grayish brown and grayish white, the former prevailing above, the latter predominating beneath; the upper surface varied by irregular markings having a transverse tendency, the lower parts with the dark markings in the form of ragged longitudinal stripes, giving way to transverse bars on the flanks; face grayish white, with narrow concentric rings of dusky; bill pale yellow; iris yellow; toes very densely clothed with hair-like feathers; length 25.00–30.00, extent 54.00–60.00, wing about 16.00–18.00, tail 11.00–12.50, culmen 1.00.

a^1. Plumage with dark sooty tints predominating, the inner webs of primaries without a distinct whitish patch on basal portion. *Nest* usually in trees. *Eggs* 2–3, 2.16 × 1.73. *Hab.* Northern North America, breeding far northward; south, in winter, to northern border of United States.

370. **S. cinerea** (Gmel.). **Great Gray Owl.**

a^2. Plumage with light mottled brownish gray and grayish white prevailing, the inner webs of quills with distinct whitish patch on basal portion. *Downy young:* "Upper parts very much darker than in the adult, dull (almost sooty) chocolate-brown; the head covered with close dark feathers very slightly tipped with whitish brown; upper parts very little marked with white; facial disk scarcely defined; under parts sooty brown closely barred with dull white; wings and tail much darker than in the adult, the outer primaries only indistinctly barred with dull grayish brown." (Dresser.)

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[1] *Scotiaptex* Swains., Classif. B. ii. 1837, 217. Type, *Strix cinerea* Gmel.

Note.—The substitution of *Ulula* Cuv. for *Scotiaptex* Swains. as the name for this genus was an error. *Strix uralensis* Pall., the type of *Ulula*, I am now convinced, from recent very careful examination and comparison with both *S. cinera* and *Strix stridula* Linn. (the latter being the type of the genus *Syrnium* Savign.), is much more nearly related, structurally and otherwise, to the latter,—so much so, in fact, that *Ulula* can rank at most only as a subgenus of *Syrnium.*

Hab. Northern portions of Europe and Asia, straggling to western Alaska (shores of Norton Sound).

370*a*. **S. cinerea lapponica** (RETZ.). **Lapp Owl.**

GENUS NYCTALA BREHM. (Page 256, pl. LXXV., fig. 1.)

Species.

COMMON CHARACTERS.—*Adults:* Above brown, more or less spotted with white; beneath white, broadly striped with brown. *Young:* Above plain brown, the wings and tail as in adults; face plain dusky, the "eyebrows" white, in conspicuous contrast; lower parts plain brownish anteriorly, plain ochraceous posteriorly.

a^1. Wing 6.50, or more, tail more than 4.00.

b^1. Smaller and paler; legs whitish, usually without spots; lower tail-coverts with narrow brown mesial streaks or shaft-streaks; wing 6.50–6.90 (6.74), tail 4.20–4.40 (4.27). *Hab.* Northern portions of eastern hemisphere.

N. tengmalmi (GMEL.). **Tengmalm's Owl.**[1]

b^2. Larger and darker; legs and feet usually buffy, more or less (sometimes thickly) spotted with brown; lower tail-coverts with broad mesial stripes of brown; length 9.00–12.00, wing 6.60–7.40 (7.12), tail 4.10–4.70 (4.42). *Nest* in trees. *Eggs* 2–4, 1.25 × 1.07. *Hab.* Northern North America; south, in winter, to northern border of United States.

371. **N. tengmalmi richardsoni** (BONAP.). **Richardson's Owl.**

a^2. Wing less than 6.00, tail less than 3.50. Plumage much as in *N. richardsoni*, but with less white on top of head and hind-neck, stripes on lower parts more reddish, and feet always (?) plain whitish or buffy; length 7.25–8.50, wing 5.25–5.90 (5.58), tail 2.80–3.25 (3.02). *Nest* in holes in trees or in deserted nests of other birds. *Eggs* 3–5, 1.18 × .98. *Hab.* Northern United States and British Provinces, rarely south of 40° in eastern portions, but in mountainous western districts south to southern Mexico.

372. **N. acadica** (GMEL.). **Saw-whet Owl.**

GENUS MEGASCOPS KAUP. (Page 256, pl. LXXV., fig. 2.)

Species.

COMMON CHARACTERS.—Outer webs of outermost scapulars mostly whitish, buffy, or pale rusty, with blackish terminal border, producing a more or less conspicuous light-colored stripe along each side of back; feathers of plumage in general with blackish shaft-streaks, or broader mesial streaks, the latter, especially on lower parts, usually throwing off narrow transverse bars; outer webs of quills with conspicuous, large, more or less quadrate whitish or buffy spots, and tail more or less distinctly (never sharply) banded with a paler tint than the ground-color; ground-color of upper surface in general usually more or less broken by lighter and darker vermiculations. *Young*, with whole plumage, excepting remiges and tail-feathers, simply barred or narrowly banded with dull grayish or whitish, the longitudinal and other markings being wholly absent. *Nestling:* Entirely white. *Nest* in holes in trees. *Eggs* 2–6.

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[1] *Strix tengmalmi* GMEL., S. N. i. 1788, 291. *Nyctala tengmalmi* BONAP., Geog. & Comp. List, 1838, 7.

*a*¹. Toes more or less distinctly feathered or bristled on upper side.

*b*¹. Dichromatic; the plumage presenting two totally distinct phases, one grayish, the other bright rufous, which have no relation to sex, age, or season. (Eastern races.)

*c*¹. Larger, the wing averaging more than 6.00.

Length 7.50–10.00, wing 6.00–7.10 (6.43), tail 3.05–3.50 (3.26). *Eggs* 1.39 × 1.18. *Hab.* Eastern United States and British Provinces, except lower portions of South Atlantic (and Gulf?) States, west to Great Plains........ 373. **M. asio** (Linn.). **Screech Owl.**

*c*². Smaller, the wing averaging less than 6.00.

*d*¹. Much darker than *M. asio*, with markings on lower parts more numerous and more extended. *Gray phase*, deep grayish brown, varying to decided umber-brown, above; legs usually deep brownish, thickly barred with darker. *Rufous phase*, more richly colored than corresponding plumage of *M. asio*, the legs usually bright rusty. Wing 5.60–6.40 (5.98), tail 2.65–3.20 (3.00). *Eggs* 1.28 × 1.11. *Hab.* Lower South Carolina and Georgia, and whole of Florida.

373*a*. **M. asio floridanus** (Ridgw.). **Florida Screech Owl.**

*d*². Slightly darker than *M. asio*, with light mottlings on upper parts (in both phases) much coarser and more conspicuous. *Rufous phase* with rufous predominating on lower parts. Length 6.50–9.00, wing 5.60–6.30 (5.96), tail 3.10–3.40 (3.28). *Eggs* 1.31 × 1.14. *Hab.* Southern Texas and eastern Mexico, south to Guatemala.

373*b*. **M. asio trichopsis** (Wagl.). **Texan Screech Owl.**

*b*². Monochromatic; the plumage presenting in all individuals essentially the same character, corresponding to the grayish phase of the eastern races. (Western races.)

*c*¹. Smaller, the wing averaging less than 6.75.

*d*¹. Plumage nearly pure ash-gray above, the usually broad blackish mesial streaks in conspicuous contrast; blackish bars on lower parts very numerous, narrow; black border to face without admixture of brown, and black spots on breast usually without distinct brown exterior suffusion; length about 6.50–8.00, wing 6.10–7.00 (6.41), tail 3.10–3.70 (3.44). *Eggs* 1.34 × 1.16. *Hab.* Northwestern Mexico and contiguous border of United States, in Arizona and New Mexico, north to Colorado (Colorado Springs). (33.)

373*f*. **M. asio cineraceus** (Ridgw.). **Mexican Screech Owl.**[1]

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[1] *Cf.* The Auk, xii. Oct. 1895, 390.

d^2. Plumage grayish brown, or decidedly brownish gray, above, the blackish mesial streaks usually narrower and less conspicuously contrasted; bars on lower parts coarser and less crowded; black border to face usually with distinct admixture of brown, and black spots on breast with distinct brown exterior suffusion; length about 8.50–10.00, wing 6.30–7.20 (6.60), tail 3.30–3.90 (3.58). *Eggs* 1.38 × 1.18. *Hab.* California.

373*c*. **M. asio bendirei** (Brewst.). **California Screech Owl.**

c^2. Larger, the wing averaging more than 6.75.

(34.) d^1. The grayer specimens hardly distinguishable in plumage from *M. asio bendirei*, but size decidedly greater; plumage varying to deep umber-brownish (especially in specimens from Pacific coast district); wing 6.92–7.80 (7.25), tail 3.65–4.60 (4.26). *Eggs* 1.50 × 1.27. *Hab.* Northwest coast, from Oregon to Sitka, and east to northern Montana (Hellgate).

373*d*. **M. asio kennicottii** (Elliot). **Kennicott's Screech Owl.**

d^2. Very light-colored, pure white largely predominating on lower parts, the upper parts varying from pale buffy grayish to pale dull grayish cinnamon, with the white spots on outer webs of exterior scapulars and quills larger than in other forms, the latter sometimes more or less confluent; wing 6.70–7.50 (6.91), tail 3.30–4.00 (3.66). *Hab.* Higher Rocky Mountains, from Colorado to eastern Montana (Fort Custer).. 373*e*. **M. asio maxwelliæ** (Ridgw.). **Rocky Mountain Screech Owl.**

a^2. Toes entirely naked, to extreme base.

Adult: Above finely mottled grayish, relieved by irregular blackish mesial streaks; outer webs of outermost scapulars bright ochraceous or orange-rufous (white beneath surface); outer webs of lower middle wing-coverts white, forming conspicuous spots; lower parts whitish, marked with very distinct broad mesial streaks and narrower bars or transverse lines of blackish; face and throat—sometimes whole upper parts—sometimes more or less tinged or washed with orange-rufous. *Young:* Above mottled transversely with grayish and whitish, but without any longitudinal markings; lower parts similarly but more coarsely and regularly barred. Wing 5.10–5.60, tail 2.60–3.00. *Eggs* about 1.13 × .98. *Hab.* Highlands of Guatemala and Mexico, and northward to Colorado and northern California (Fort Crook).

(35.) 374. **M. flammeolus** (Kaup). **Flammulated Screech Owl.**

Genus BUBO Duméril. (Page 256, pl. LXXVI., fig. 1.)

Species.

Common Characters.—Plumage irregularly varied with buffy, tawny, or whitish (or all together), and dusky, in variable relative extent. *Nest* in trees (often a deserted hawk's or crow's nest). *Eggs* 2–3.

*a*¹. Lower parts barred with dusky, but without stripes; anterior upper parts destitute of stripes; iris bright yellow. (Subgenus *Bubo*.)

Adult: Above vermiculated with blackish on a dull grayish or grayish brown ground-color (sometimes almost white), the outer webs of quills marked with quadrate spots of lighter and darker, and tail crossed by about seven narrow bands of mottled dusky; eyebrows and lores whitish; part of throat and middle of chest white; rest of lower parts more or less ochraceous or tawny (tips or exposed portion of feathers usually whitish), the sides, flanks, etc., distinctly and regularly barred with dusky. *Young:* Quills and tail-feathers as in adult; rest of plumage dull buffy or ochraceous, everywhere barred with dusky. *Male:* Length 18.00–23.00, extent about 49.00–52.00, wing about 14.50–15.25, tail 8.25, weight about 3½ pounds. *Female:* Length 22.00–25.00, extent about 57.00, wing 16.00, tail 9.00.

*b*¹. Darker colored, with dusky markings more extensive or more numerous (or both), the plumage usually with much mixture of tawny or ochraceous.

*c*¹. Moderately dark-colored, the face usually more or less rusty, and the plumage usually with an excess of ochraceous or tawny rufous. *Eggs* 2.20 × 1.83. *Hab.* Eastern North America, south through eastern Mexico to Costa Rica.

375. **B. virginianus** (Gmel.). **Great Horned Owl.**

*c*². Extremely dark-colored, the face usually sooty brownish, mixed with grayish white, the plumage usually without excess of ochraceous or tawny—sometimes with none. *Egg* (single) 2.24 × 1.90. *Hab.* Northwest coast, from Oregon north to Alaska; Labrador.

375*c*. **B. virginianus saturatus** Ridgw. **Dusky Horned Owl.**

*b*¹. Lighter colored, with the light grayish and buffy tints of the ground-color largely prevailing over the darker markings, the lower parts purer white.

*c*¹. General aspect of plumage above grayish, with more or less of buffy admixture; dark markings of lower parts distinct. *Eggs* 2.18 × 1.85. *Hab.* Western United States (except northwest coast), eastward across Great Plains (straggling to northern Illinois, Wisconsin, and western Canada), north to Manitoba, south over table-lands of Mexico.

375*a*. **B. virginianus subarcticus** (Hoy). **Western Horned Owl.**

*c*². General aspect of plumage above white, through fading of the ground-color and restriction of dark markings; beneath pure white, with dark markings, usually much restricted. *Eggs* 2.19 × 1.91. *Hab.* Arctic America, chiefly in the interior; south, in winter, to northern Rocky Mountains and Great Plains (Dakota, Montana, etc.).

375*b*. **B. virginianus arcticus** (Swains.). **Arctic Horned Owl.**

*a*². Lower parts striped with black, but without bars; anterior upper parts also striped with black (the ground-color, both above and below, ochraceous); iris deep brown. (Subgenus *Rhinoptynx* Kaup.[1])

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[1] *Rhinoptynx* Kaup, Contr. Orn. 1852, 114. Type, *Strix mexicana*, Gmel.

Wing 11.20–12.00, tail 6.00–6.50. *Hab.* Tropical America in general (except West Indies), north to Mexico.

B. mexicanus (Gmel.). **Striped Horned Owl.**[1]

Genus NYCTEA Stephens. (Page 256, pl. LXXVI., fig. 2.)

Species.

Adult male: Plumage pure white, sometimes almost immaculate, but usually marked more or less with transverse spots or bars of clear slaty brown on top of head, back, and scapulars, the quills and tail-feathers with dusky spots near ends; lower parts usually marked more or less on belly, sides, and flanks with narrow bars of clear slaty brown, but these markings sometimes altogether wanting; length about 20.00–23.00, wing 15.50–17.30, tail 9.00–9.70, culmen 1.00. *Adult female:* Much darker colored than the male, only the face, fore-neck, middle of breast, and feet being immaculate, other portions being heavily barred with dusky, the top of head and hind-neck spotted with the same; length 23.00–27.00, wing 17.30–18.70, tail 9.70–10.30, culmen 1.10. *Downy young:* Uniform dusky brown, or deep sooty grayish, paler on legs and feet. *Nest* on ground. *Eggs* 3–10, 2.24 × 1.77. *Hab.* Extreme northern portions of northern hemisphere in summer, migrating southward in winter (in North America almost across the United States, and even reaching, accidentally, the Bermudas).

376. **N. nyctea** (Linn.). **Snowy Owl.**

Genus SURNIA Duméril. (Page 256, pl. LXXIII., fig. 4.)

Species.

Common Characters.—*Adult:* Top of head and hind-neck spotted with white and blackish, or dark brown, in varying relative proportion; a patch of uniform blackish or dark brown on each side of hind-neck, and another across hinder portion of ear-coverts; rest of upper parts brown, the scapulars heavily spotted or blotched, wings more or less spotted, upper tail-coverts broadly and distinctly barred, and tail narrowly and indistinctly barred, with white; face and lower parts white, the lower breast, belly, sides, flanks, and under tail-coverts very regularly barred with brown. *Young:* Upper parts dark sepia-brown, the feathers of top of head and hind-neck tipped with dull grayish buff, which constitutes the prevailing color; feathers of back, and scapulars, indistinctly tipped with dull grayish buff; lores and ear-coverts plain brownish black, rest of face dull whitish; lower parts dull whitish, deeply shaded across chest with dark sooty brownish, other portions being broadly but rather indistinctly barred with brown, these markings narrower and more confused anteriorly, and on legs. Length about 14.75–17.50, wing about 9.00, tail 6.80–7.00.

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[1] *Strix mexicana* Gmel., S. N. i. 1788, 288. *Bubo mexicanus* Ridgw., in Hist. N. Am. B. iii. 1874, 61.

a^1. Light-colored, with white largely prevailing on top of head, hind-neck, and scapular region; dark markings of head usually dark brown, much reduced in size; bars on lower parts narrow, rather light brown. *Hab.* Northern portions of eastern hemisphere, from Norway to Kamtschatka and more northern Asiatic shores of Bering's Sea (Plover Bay); accidental in western Alaska (St. Michael's)?........................ 377. **S. ulula** (LINN.). **Hawk Owl.**

a^2. Dark-colored, with black or brownish black prevailing on top of head and hind-neck, and deep brown on scapular region—the brown of back, etc., usually much darker than in *S. ulula;* dark patches on sides of head, etc., more extensive, and deep black or brownish black; bars of lower parts much broader, and (usually) darker. *Nest* on pine or spruce trees. *Eggs* 2–7, 1.55 × 1.24. *Hab.* Northern North America; south, in winter, to northern border of United States; British Islands?
377*a*. **S. ulula caparoch** (MÜLL.). **American Hawk Owl.**

GENUS **SPEOTYTO** GLOGER. (Page 257, pl. LXXVII., fig. 1.)

Species.

COMMON CHARACTERS.—*Adults:* Above brownish, spotted, barred, and sometimes otherwise varied with white or buffy; lower parts white or buffy, broadly barred, or transversely spotted, with brown; eyebrows, chin, and space on middle of chest plain white; a collar of mixed brown and buffy across throat; legs plain white or buffy. *Young:* Above plain brown, except wings and tail, which are marked as in adults; upper tail-coverts, and large space on wing-covert area, with lower parts, plain buff; anterior lesser wing-coverts darker brown than back; upper throat, and broad space across chest, plain white. *Nest* at extremity of hole or burrow in ground. *Eggs* 3–11.

a^1. Lower parts with ground-color distinctly buffy or much tinged with buff, the lower tail-coverts never (?) spotted; upper parts earthy brown, with buffy spotting and barring; length 9.00–11.00, wing 5.80–7.20 (6.69), tail 3.15–3.50 (3.34), culmen .55–.60 (.58), tarsus 1.70–1.92 (1.80). *Eggs* 1.22 × 1.00. *Hab.* Western North America, north to or beyond northern boundary of United States, east to Great Plains, south to Guatemala; accidental in New York (city) and Massachusetts.
378. **S. cunicularia hypogæa** (BONAP.). **Burrowing Owl.**

a^2. Lower parts nearly pure white, with little if any buff tinge, except on thighs and lining of wings; upper parts clear sepia-brown, with nearly pure white spotting and barring; wing 6.30–6.70 (6.47), tail 3.00–3.50 (3.15), culmen .58–.68 (.61), tarsus 1.65–1.80 (1.75). *Eggs* 1.24 × 1.04. *Hab.* Florida and adjacent Bahama Islands (New Providence).
378*a*. **S. cunicularia floridana** RIDGW. **Florida Burrowing Owl.**

GENUS **GLAUCIDIUM** BOIE. (Page 257, pl. LXXV., fig. 3.)

Species.

COMMON CHARACTERS.—Upper parts grayish, brownish, or rufous, the wings and scapulars more or less spotted with whitish, the tail barred with white or rufous, the top of the head (in adults) streaked or speckled with whitish (plain in young); lower parts whitish, striped with blackish, brown, or rufous; eyebrows whitish; face encircled by a dusky border.

*a*¹. Sides of breast and fore-part of sides brownish, more or less distinctly spotted with paler (spots sometimes indistinct, or partly concealed); tail-bands always white, the interspaces blackish; top of head speckled or dotted with whitish in adult, plain plumbeous or slaty in young; lower parts striped with blackish; color of back varying from slaty grayish to deep umber- or sepia-brown; length 6.50–7.50, wing 3.40–4.00, tail 2.40–2.80. *Egg* (single specimen, identification somewhat doubtful) 1.17 × .88. *Hab.* Western North America, north to British Columbia, east to Colorado and New Mexico, and south through highlands of Mexico to Guatemala.

(36.) 379. **G. gnoma** WAGL. **Pygmy Owl.**

*a*². Sides of breast and fore-part of sides plain brown or rufous, without trace of lighter markings; tail-bands varying from white to rufous, the interspaces varying from grayish brown to blackish or dark rusty; top of head narrowly streaked with whitish or pale rusty in adult, plain in young; lower parts striped with brown or rufous; color of back, etc., varying from grayish brown to bright rufous; length 6.50–7.00, wing 3.50–4.60, tail 2.20–3.50. *Hab.* Whole of tropical America (except West Indies), north to southwestern border of United States (southern Texas to Arizona).

380. **G. phalænoides** (DAUD.). **Ferruginous Pygmy Owl.**

GENUS **MICROPALLAS** COUES. (Page 257, pl. LXXV., fig. 4.)

Species.

COMMON CHARACTERS.—Above grayish or brownish, finely mottled with darker, and indistinctly speckled with pale rusty; an interrupted whitish collar across hind-neck; outer webs of outermost scapulars white; wings spotted with whitish and pale rusty; tail brownish, crossed by 5–6 narrow, usually interrupted, bands of pale brownish or rusty; eyebrows, lores, and "cravat" under chin white; lower parts white, marked with ragged, rather longitudinal, blotches of pale brownish or rusty, finely mottled with darker.

*a*¹. Prevailing tint grayish, or grayish brown; bands on tail narrower, always (?) interrupted on middle feathers; length 5.50–6.25, wing 4.00–4.40, tail 1.90–2.30. *Nest* in hole of giant cactus. *Eggs* 2–5, 1.06 × .90. *Hab.* Southwestern

United States (southern Arizona and southeastern California) and Lower California, south to southern Mexico (Puebla and Guanajuato).

381. **M. whitneyi** (Cooper). **Elf Owl.**

a^2. Prevailing tint deep brownish, the spots and bands more decidedly rusty; bands on tail broader, not interrupted on middle feathers; wing 4.05–4.25, tail 1.90–2.20. *Hab.* Socorro Island, western Mexico.

M. graysoni Ridgw. **Socorro Elf Owl.**[1]

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[1] *Micrathene graysoni* Ridgw., Auk, iii. July, 1886, 333.

ORDER **PSITTACI.**—THE PARROTS, MACAWS, PAROQUETS, ETC. (Page 2.)

Families.

(Characters same as those given for the Order)... **Psittacidæ.** (Page 268.)

FAMILY **PSITTACIDÆ.** (Page 268.)

North and Middle American Genera.

*a*¹. Tail graduated, the feathers narrowed toward tips.
  *b*¹. Cheeks naked; tail longer than wing, graduated for more than half its length; very large (wing more than 12.00)................................ *Ara*.[1] **(37.)**
  *b*². Cheeks densely feathered; tail shorter than wing, graduated for less than half its length; small or medium (wing not more than 12.00).
    *c*¹. Wing more than 3.50; upper mandible very little if any broader than high at base.
      *d*¹. Second or third quill longest.
        *e*¹. Tail more than two-thirds as long as wing; wing more than 5.00.
          *f*¹. Bill very large, much compressed, the tip of lower mandible much produced, truncated, and flattened; gonys flattened; tail graduated for only about one-third its length; cere densely feathered, concealing the nostrils; wing 8.00, or more...... **Rhynchopsitta.** (Page 269.)
          *f*². Bill smaller, less compressed, with tip of lower mandible less produced, and gonys rounded; tail graduated for much more than one-third its total length; cere naked in some species, densely feathered in others; wing less than 8.00 in all North American species. **Conurus.** (Page 269.)
        *e*². Tail less than two-thirds as long as the wing; wing less than 5.00.
          Cere naked on top.................................... *Brotogeris*.[2]
      *d*². First quill longest.
          Tail (in northern species) less than two-thirds as long as

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[1] *Ara* BRISSON, Orn. iv. 1760, 184. Type, *A. brasiliensis* BRISS., = *A. chloroptera* GRAY. For synopsis of Mexican species, see Appendix.

[2] *Brotogeris* VIG., Zool. Jour. ii. 1825, 400. Type, *Psittacus pyrrhopterus* LINN.

One Mexican and Central American species, *B. tovi* (LINN.); color uniform green, paler below, upper wing-coverts olive-brownish, and spot on chin orange; length about 6.50 inches.

wing; wing (in northern species) less than 5.00; top of cere feathered .... *Myiopsitta.*[1]

c^2. Wing not more than 3.50; upper mandible very much broader than high at base; tail scarcely more than half as long as wing; cere feathered on top .... *Psittacula.*[2]

a^2. Tail slightly rounded, the feathers broad at ends.

Third or fourth quill longest; cere always naked, with nostrils exposed.

(38.) *Amazona.*[3]

GENUS **RHYNCHOPSITTA** BONAPARTE. (Page 268, pl. LXXVIII., fig. 2.)

Species.

Adult: Forehead, fore-part and sides of crown, lores, and anterior lesser wing-coverts, poppy-red; under primary coverts lemon-yellow; under surface of quills, secondaries, and tail olivaceous dusky; rest of plumage uniform grass-green, rather paler and duller on lower parts, but much brighter on sides of head; bill entirely blackish. *Younger:* Similar to adult, but bill whitish, with a triangular dusky space on each side (extending upward from cutting-edge about half-way to culmen and anteriorly as far as the notch); red of forehead not extending over eye; red on thighs and along edge of wing interrupted and very inconspicuous. (*Young in first plumage* probably without any red, the plumage entirely green, except on under surface of wing and tail, and bill probably entirely whitish.) Length 16.00–16.75, wing 8.50–10.50, tail 6.30–7.00, graduated for 2.25–2.35, culmen 1.45–1.55, height of bill at base 1.65–1.75. *Hab.* Northern and central Mexico (pine region); southwestern Texas and southern New Mexico.[4]

—. **R. pachyrhyncha** (SWAINS.). **Thick-billed Parrot.**

GENUS **CONURUS** KUHL. (Page 268, pl. LXXVII., fig. 1.)

Species.

COMMON CHARACTERS (of North American and Mexican species).—Prevailing color uniform green; adults with or without yellow or orange on head.

a^1. Cere and nostrils entirely concealed by dense feathering; culmen rounded.

Adult: Head and upper neck pure gamboge-yellow, the forehead, lores, and cheeks deep orange or orange-red; upper parts rich parrot-green, the tertials, tips of greater wing-coverts, and basal portion of outer webs of quills yellowish green or greenish yellow; rest of quills dark bluish; lower parts clear light yellowish green; edge of wing and thighs tinged with orange. *Immature:* Similar to adult, but head and neck entirely green, except forehead and lores, which are dull orange-red. *Young* (*first plumage*): Similar to preceding, but with little if any orange on forehead or lores. Length 11.35–14.00, wing 7.00–7.60, tail 6.40–7.10. *Nest* in hole of large tree (usually cypress or sycamore). *Eggs* 1.37 × 1.06, ovate, short ovate, or rounded ovate, pure white. *Hab.* Formerly, entire Mississippi Valley, Gulf States, and southern Atlantic States, north (casually ?) to Michigan, Maryland, or even to Albany, New York, regularly to Ohio, Indiana, Illinois, Nebraska, etc., west to eastern Colorado and Texas; now nearly exterminated, and existing only in comparatively restricted and isolated localities in lower Mississippi Valley and Gulf States........... 382. **C. carolinensis** (Linn.). **Carolina Paroquet.**

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[1] *Myiopsitta* BONAP., Rev. et Mag. Zool. 1854, 150. Type, *Psittacus murinus* GMEL.

One Mexican and Central American species, *M. lineola* (CASS.); color uniform green, lighter beneath, more or less distinctly barred above and along sides with blackish; length about 6.00 inches.

[2] *Psittacula* BRISS., Orn. iv. 1760, 382. Type, *P. brasiliensis* BRISS., = *Psittacus passerinus* LINN.

One species found in western Mexico as far north as Mazatlan (*P. cyanopyga* SOUANCÉ) is uniform green, lighter beneath, the male with rump and some of the under wing-coverts fine light blue; length about 4.50 inches.

[3] *Amazona* LESS., Traité, 1831, 189. Type, *Psittacus pulverulentus* GMEL. For synopsis of Mexican species, see Appendix.

[4] Dr. R. W. SHUFELDT, U.S.A., *in epist.*

*a*². Cere partly naked, the nostrils exposed; culmen flattened.

*b*¹. Wing 6.50, or more; quills and secondaries green. (Color uniform grass-green, including quills, paler on lower parts; under surface of quills and tail-feathers yellowish olive.)

*c*¹. Rather smaller, with weaker bill, relatively larger feet, and more yellowish green lower parts; wing 6.70–7.00 (6.87), tail 5.40–6.30 (5.96), culmen 1.00–1.10 (1.03), depth of upper mandible at base .50–.60 (.55), width .55–.65 (.60), tarsus .66–.75 (.71), middle toe .85–1.00 (.91). *Hab.* Northern Mexico (Chihuahua) to Nicaragua.

C. holochlorus Scl. **Green Parakeet.**[1]

*c*². Rather larger, with stouter bill, relatively weaker feet, and more deeply green lower parts; wing 6.50–6.70 (6.59), tail 6.10–6.50 (6.29), culmen 1.00–1.12 (1.07), depth of upper mandible at base .57–.61 (.59), width .61–.65 (.63), tarsus .70–.72 (.70), middle toe .85–.89 (.86). *Hab.* Socorro Island, western Mexico.

C. holochlorus brevipes Baird. **Socorro Parakeet.**[2]

*b*². Wing 5.50, or less; quills and secondaries partly blue.

*c*¹. Bill horn-colored, the ends of both mandibles whitish; throat and chest dull olive or olive-brownish; belly dull yellowish olive or olive-yellowish, in contrast with bright green of sides and flanks; top of head entirely green; wing 5.00–5.40, tail 4.60–5.10. *Hab.* Southern Mexico, and south to Nicaragua. **C. aztec** Souancé. **Aztec Parakeet.**[3]

*c*². Bill buffy whitish (sides of lower mandible horn-colored in young); throat and chest yellowish olive; belly clear yellowish green, like sides and flanks; top of head dull verditer-blue, the forehead buffy orange in adult; wing 5.10–5.50, tail 4.20–4.80. *Hab.* Southern Mexico, from Orizaba and Mazatlan south to Costa Rica.

C. petzii (Wagl.). **Petz's Parakeet.**[4]

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[1] *Conurus holochlorus* Scl., Ann. Mag. N. H. 1859, 224.

[2] *Conurus holochlorus* var. *brevipes* Baird, Ann. Lyc. N. Y. 1871, 14.

[3] *Conurus aztec* Souancé, Rev. et Mag. Zool. 1857, 97.

[4] *Sittace petzii* Wagl., Mon. Psitt. 1832, 650. *Conurus petzii* Gray, Gen. B. ii. 1845, 413, sp. 13.

ORDER **COCCYGES.**—THE CUCKOOS, ETC.

(Page 3.)

Families.

a^1. Toes 2 before, 2 behind.

b^1. Bill as long as head, compressed, with cutting-edges smooth; nostrils exposed; no distinct rictal bristles; tarsus nearly or quite as long as longest anterior toe (sometimes longer), naked for greater part of its length; anterior toes separated to extreme base; plumage without bright or metallic colors. (Suborder *Cuculi.*)............... **Cuculidæ.** (Page 271.)

b^2. Bill much shorter than head, thick and broad at base, with cutting-edges serrated; nostrils concealed by antrorse bristles; gape with strong bristles; tarsus much shorter than longest anterior toe, chiefly or entirely feathered; anterior toes united for basal half; plumage with bright or metallic colors (except in young). (Suborder *Trogones.*)
Trogonidæ. (Page 275.)

a^2. Toes 3 before, 1 behind. (Suborder *Alcyones.*)

b^1. Bill not longer than head, the culmen gently but decidedly curved, the cutting-edges serrated; tail (in typical genus) much longer than wing, with middle pair of feathers much longer than the rest, and usually with the webs interrupted near end; tarsus longer than middle toe.
Momotidæ. (Page 277.)

b^2. Bill longer than head, with straight outlines, the cutting-edges smooth (in all American species); tail much shorter than wing, with middle feathers (in American species) not longer than the rest; tarsus only about half as long as middle toe.................................. **Alcedinidæ.** (Page 278.)

FAMILY **CUCULIDÆ.**—THE CUCKOOS, ANIS, ETC. (Page 271.)

Genera.

a^1. Tail-feathers 8; bill nearly as deep as long, the culmen elevated into a much compressed convex crest; plumage (in typical genus) uniform blackish. (Subfamily *Crotophaginæ.*)............................ **Crotophaga.** (Page 272.)

a^2. Tail-feathers 10; bill less than half as deep as long, the culmen not elevated nor compressed; plumage more or less varied. (Subfamily *Cuculinæ.*)

b^1. Bill longer than head, straight to near the rather abruptly decurved tip; loral feathers stiff, bristly, and plumage generally coarse or harsh; tarsus much longer than outer anterior toe, with claw; very large (wing more than 6.00, tail 12.00 or more), and plumage much striped.
Geococcyx. (Page 272.)

b^2. Bill not longer than head, the culmen gently curved for the greater part of its length; loral feathers and general plumage soft and blended; tarsus shorter than outer anterior toe, with claw; small (wing less than 6.00, tail less than 8.00), and plumage without stripes.

(39.) **Coccyzus.** (Page 273.)

GENUS **CROTOPHAGA** LINNÆUS. (Page 271, pl. LXXIX., fig. 1.)

Species.

COMMON CHARACTERS.—Plumage entirely dull black, the feathers of head, neck, and body edged or bordered with dull metallic bluish, greenish, or bronzy; wings and tail faintly glossed with metallic bluish or violet. *Young*, uniform dull sooty black. *Nest* usually on trees (sometimes in reedy marshes), composed of sticks, etc., lined usually with leaves. *Eggs* 5–8—sometimes numerous (evidently deposited by several birds)—dull glaucous-blue, but this usually covered by a superficial white chalky crust.

a^1. Upper mandible smooth, or with a few transverse wrinkles; length 12.00–15.00, wing 5.50–6.00, tail 7.50–8.30. *Eggs* 1.36 × 1.02. *Hab.* West Indies and eastern South America; rare or casual in southern Florida and Louisiana, and accidental near Philadelphia.......................... 383. **C. ani** LINN. **Ani.**

a^2. Upper mandible with several distinct longitudinal grooves, parallel with the culmen; length 12.00–14.50, wing 5.50–6.50, tail 7.30–8.30. *Eggs* 1.23 × .94. *Hab.* Middle America (both sides) from lower Rio Grande Valley in Texas and Lower California to Peru.
384. **C. sulcirostris** SWAINS. **Groove-billed Ani.**

GENUS **GEOCOCCYX** WAGLER. (Page 271, pl. LXXIX., fig. 2.)

Species.

COMMON CHARACTERS.—Plumage conspicuously striped with dull whitish or buffy and bronzed brown, the latter glossed with green; naked skin before and behind eye brightly colored (blue, white, and red, or orange) in life.

a^1. Wing more than 6.00, tail more than 11.00; throat and chest light brownish, streaked with dusky; above glossy blue-black anteriorly and metallic greenish brown posteriorly, the feathers broadly edged with whitish; lower parts whitish, the chest and fore-neck tinged with pale brownish or dull ochraceous, and streaked with blackish; tail-feathers (except two middle pairs) broadly tipped with white, the outer webs glossy blue-black, the inner webs greenish; length 20.00–24.00, wing 6.50–7.00, tail 11.50–12.00. *Nest* in bushes or low trees, rudely constructed of sticks, grasses, etc. *Eggs* 2–12, 1.54 × 1.18, ovate, white, or buffy white. *Hab.* Northern Mexico and contiguous portions of United States, north to western Indian Territory and Kansas, southern Colorado, and California; Lower California.
385. **G. californianus** (LESS.). **Road-runner.**

*a*². Wing less than 6.00, tail less than 11.00; throat and chest plain buff or buffy whitish; above metallic bronzy brown, becoming blue-black anteriorly, each feather broadly edged with whitish; beneath buffy whitish or buff, including throat, fore-neck, and chest, the sides of the latter streaked with black; two middle tail-feathers bronzy brown, the rest metallic greenish, broadly tipped with white; wing about 5.50, tail about 10.30. *Hab.* Guatemala and southern Mexico, north to Yucatan, Vera Cruz, and Mazatlan.
G. affinis Hartl. **Mexican Road-runner.**[1]

Genus **COCCYZUS** Vieillot. (Page 272, pl. LXXX., fig. 1.)

Species.

Common Characters.—Above plain brownish gray or grayish brown, with more or less of a faint bronzy lustre, the color usually becoming more grayish on head, on side of which (over ear-coverts) is a darker stripe; lower parts plain whitish, buffy, or ochraceous; tail-feathers (except middle pair) more or less distinctly tipped with whitish. *Nest* a slight flat structure of sticks, etc., usually on small trees or lower branches of larger trees.

*a*¹. Basal half, or more, of lower mandible yellow; *adult* with tail-feathers (except middle pair) black, broadly and abruptly tipped with white; *young* with tail-feathers grayish dusky, broadly, but not sharply, tipped with dull white.
  *b*¹. Inner webs of quills chiefly rufous, the outer webs more or less tinged with same toward base; lower parts white tinged with pale ashy on fore-neck, chest, and thighs.
    *c*¹. Smaller, with proportionally smaller and weaker bill; length 11.00–12.70, wing 5.40–5.80 (5.61), tail 6.00–6.15 (6.07), exposed culmen .97–1.01 (.99), depth of bill at base .32–.34 (.33). *Eggs* 2–5, 1.19 × .90, dull pale glaucous-green or glaucous-white. *Hab.* Eastern North America, north to New Brunswick, Canada, etc., west to the Great Plains, south, in winter, to West Indies, eastern Mexico, and Costa Rica............ 387. **C. americanus** (Linn.). **Yellow-billed Cuckoo.**
    *c*². Larger, with proportionally larger and stouter bill; length 12.30–13.50, wing 5.50–6.00 (5.84), tail 6.10–6.90 (6.59), culmen 1.02–1.08 (1.05), depth of bill through base .37–.40 (.39). *Hab.* Western United States, north to Oregon, east to western Texas and Colorado, south over table-lands of Mexico; Lower California.
    387*a*. **C. americanus occidentalis** Ridgw. **Californian Cuckoo.**[2]
  *b*². Quills without rufous on either web; lower parts buffy or ochraceous, paler anteriorly.
    *c*¹. Larger, with lower parts much more deeply colored; lower parts deep

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[1] *Geococcyx affinis* Hartlaub, Rev. Zool. 1844, 215.

[2] New subspecies.

ochraceous, often including even the throat; wing 4.95–6.05 (5.40), tail 6.45–7.95 (6.98), exposed culmen 1.00–1.22 (1.10), depth of bill near base .35–.47 (.40). *Hab.* West Indies in general (except Bahamas) and borders of Caribbean Sea, from Guiana to Honduras; Key West; coast of Louisiana.

386. **C. minor** (GMEL.). **Mangrove Cuckoo.**[1]

c^2. Smaller and with lower parts much paler in color; posterior lower parts buff (sometimes quite pale, and never approaching the deep ochraceous tint of *C. minor*); anterior lower parts (chin, throat, and chest) pale ashy, or grayish white, paler anteriorly, the throat usually more or less tinged with buff; length 11.75–12.25, wing 5.05–5.35 (5.23), tail 6.25–6.90 (6.65), exposed culmen 0.98–1.15 (1.06), depth of bill near base 0.33–0.40 (0.36). *Hab.* Bahamas and Florida Keys.

[386*a*.] **C. minor maynardi** RIDGW. **Maynard's Cuckoo.**[2]

a^2. Bill without any yellow (basal portion of lower mandible leaden bluish in life); *adult* with tail-feathers (except middle pair) grayish brown (with bronzy green lustre on upper surface), narrowly tipped with white, this preceded by a less distinct subterminal bar of dusky; *young* with white tips to tail-feathers narrower and less distinct, the dusky subterminal bar obsolete.

Adult: Above bronzy grayish brown, with an olivaceous cast, becoming grayish on forehead and lores; chin and throat pale buffy grayish (sometimes more distinctly buffy); rest of lower parts white, faintly tinged on breast and sides with grayish; naked eyelids bright red in life. *Young:* Above dull brown, with a coppery bronze lustre, becoming more grayish or olivaceous on tail, but more rusty on wings, especially on quills; lower parts much as in adult; naked eyelids pale yellowish in life. *Nestling:* Feathers of upper parts tipped with whitish. Length about 11.00–12.70, wing 5.12–5.65, tail 6.25–7.00. *Eggs* 2–7, 1.07 × .81, deep glaucous-green or verditer-blue. *Hab.* Eastern North America, north to Labrador and Manitoba, west to Rocky Mountains, south, in winter, to West Indies, Middle America, and northern South America.

(40.) 388. **C. erythrophthalmus** (WILS.). **Black-billed Cuckoo.**

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[1] Pure synonymes of this species are *seniculus* LATH., *helviventris* CAB., *dominicus* SCL. (*nec* LINN.), and *nesiotes* CAB. *Coccyzus seniculus* of AUDUBON also belongs here, the supposed Floridan specimen given him by Mr. Harris, and now before me, being this species and not the Bahama one (*C. maynardi*), which raises the suspicion that it, like the specimens of *Lampornis* "*mango*" (*i.e.*, *violicauda*) obtained from the same source, probably came from Guiana. *C. minor* is divisible into several more or less strongly characterized local races, but I shall not attempt such subdivision here.

[2] Dedicated to Mr. C. J. Maynard, the accomplished author of the "Naturalist's Guide" and "Birds of Eastern North America," whose valuable descriptions of the birds of Florida—his special field of investigation—include an interesting account of the peculiar haunts of this species.

FAMILY **TROGONIDÆ.**—THE TROGONS. (Page 271.)

Genera.

a^1. Middle wing-coverts and upper tail-coverts normally developed, blended; head not crested nor "horned" .... **Trogon.** (Page 275.)

a^2. Middle wing-coverts and upper tail-coverts unusually developed, more or less lanceolate or falcate, with very distinct outlines; head crested or "horned."

  b^1. Head with a bushy or compressed crest............................ *Pharomachrus.*[1]

  b^2. Head with slender ear-tufts.. *Euptilotis.*[2]

GENUS **TROGON** LINNÆUS. (Page 275, pl. LXXXI., fig. 1.)

Species.

COMMON CHARACTERS.—*Adult males:* Back, scapulars, rump, and middle tail-feathers metallic green, sometimes varied with blue or coppery, the middle tail-feathers tipped with opaque black; wing-coverts grayish, in some species finely undulated with white; breast, belly, and under tail-coverts fine red or yellow, bordered anteriorly by a white band across breast. *Adult females* similar to males, but metallic hues of back, etc., replaced by plain grayish or brownish.

a^1. Under parts red; females and young brown above.

  b^1. Inner webs of outer tail-feathers chiefly white, more or less barred with dusky or black, in both sexes.

    c^1. *Adult male:* Crown, occiput, hind-neck, back, scapulars, rump, and upper tail-coverts rich metallic bronzy green, varying to golden or coppery bronze (the rump and upper tail-coverts always more green than the back—sometimes pure green); middle tail-feathers deep metallic bronze, varying to rich copper-color, broadly tipped with black; wings (except primaries) delicately undulated with white and black, the two colors in nearly equal amount; quills dusky, with outer webs chiefly grayish white; forehead, lores, sides of head, chin, and throat, dull opaque black; chest metallic greenish or coppery bronze, like back; a pure white band across breast; behind this, all the lower parts pure scarlet-vermilion; exposed portion of outer tail-feathers white, with a broad terminal space immaculate, but rest, on both webs, irregularly and narrowly barred, or marked with zigzag lines, of blackish. *Adult female:* Metallic colors of male replaced by light grayish brown, becoming more rufescent (sometimes cinnamon-rufous) on middle tail-feathers; forehead, sides of head, and throat, dull grayish; outer tail-feathers much more coarsely and regularly barred with black. *Young male:* Head, neck, and chest dull brownish gray, paler on chin, browner on chest and occiput, almost black on lores, beneath eyes, and terminal portion of ear-coverts; an orbital ring (interrupted on middle portion of upper eyelid and anterior half of lower lid), and broad oblique bar across middle portion of ear-coverts, white; back and scapulars grayish brown, becoming more russet on lower back, rump, and upper tail-coverts; middle, and many of lesser, wing-coverts buffy white, bordered with black, producing conspicuous large spots; greater wing-coverts and tertials pale grayish brown, finely sprinkled with dusky, and tipped with a large spot of buffy white; lower parts grayish white, the breast and upper belly coarsely spotted or mottled with brownish gray; tail much as in adult female. Length about 11.25–12.00, wing 5.10–5.50, tail 6 50–7.20. *Hab.* Central and northern Mexico, north to southern Texas (lower Rio Grande Valley) and southern Arizona.

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[1] *Pharomachrus* DE LA LLAVE, Registro Trimestre, i. num. 1, 1832, 48. Type, *P. mocinno* DE LA LLAVE. One Mexican species (*P. mocinno*), the magnificent Quetzal, or royal bird of the Aztecs.

[2] *Euptilotis* GOULD, Mon. Trog. pt. i. 1858, pl. vi. Type, *Trogon neoxenus* GOULD.

389. **T. ambiguus** Gould. **Coppery-tailed Trogon.**

c^2. *Adult male:* Similar to same sex of *T. ambiguus*, but upper parts bronzy green, the middle tail-feathers golden green, wings rather more coarsely undulated, and outer tail-feathers more broadly and regularly barred with black. *Adult female:* With black bars on outer tail-feathers broader and less numerous (?). Length about 12.00, wing 5.00–5.30, tail 7. *Hab.* Guatemala, southern Mexico, and Salvador (Libertad).

T. elegans Gould. **Elegant Trogon.**[1]

b^2. Inner webs of outer tail-feathers uniform black, or black narrowly barred with white, in adult males, destitute of bars (except sometimes—in *T. puella*—a terminal white and narrower subterminal black bar).

c^1. *Adult male:* Upper parts and chest pure metallic green, more bronzy on back; wings very minutely zigzagged and freckled with white, the markings hardly distinguishable at a little distance; quills without whitish edgings; outer tail-feathers entirely black, except the very broad and abrupt white tip. *Adult female:* Outer web of outer tail-feathers broadly barred with black and white, the inner web chiefly uniform black, without any bars. Length about 12.00, wing 5.50–6.00, tail 7.40–7.50. *Hab.* Guatemala to northern Mexico (Chihuahua)............................ **T. mexicanus** Swains. **Mexican Trogon.**[2]

c^2. *Adult male:* Upper parts and chest bronzy green, as in *T. mexicanus;* wings very distinctly undulated with white, the quills edged with the same; outer tail-feathers distinctly but narrowly barred across both webs with white, and rather narrowly tipped with the same. *Adult female:* Outer web of outer tail-feathers plain white, sometimes minutely and indistinctly freckled with grayish; inner web chiefly plain dusky grayish, with white tip and dusky subterminal bar. Length about 10.50–11.50, wing 5.10–5.50, tail 5.50–6.50. *Hab.* Central America, south to Veragua, north to *tierra caliente* of eastern Mexico (Vera Cruz).

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[1] *Trogon elegans* Gould, P. Z. S. 1834, 26.

[2] *Trogon mexicanus* Swains., Philos. Mag. n. s. i. 1827, 440.

T. puella Gould. **Xalapa Trogon.**[1]

*a*². Under parts yellow; females slate-color or plumbeous above.

*b*¹. Outer web of outer tail-feathers uniform black, except broad and abrupt white tip. *Adult male:* Head, neck, and chest dull black; back, scapulars, and middle tail-feathers metallic green; rump and upper tail-coverts metallic blue, sometimes inclining to violet. *Adult female:* Head, neck, chest, and entire upper parts uniform deep slate. Length about 11.00, wing 5.50–5.75, tail 5.80–6.00. *Hab.* Central America, north to Yucatan, south to Costa Rica.

T. melanocephalus Gould. **Black-headed Trogon.**[2]

*b*². Outer web of outer tail-feather white, except at base. *Adult male:* Head, neck, and chest slate-gray or plumbeous, glossed (except anteriorly) with metallic green; back and scapulars bright metallic green, tinged with golden; rump and upper tail-coverts metallic greenish blue; middle tail-feathers metallic green. *Adult female:* Head, neck, chest, and entire upper parts uniform slate-gray. Length about 10.00–12.00, wing 5.40–5.70, tail about 6.00. *Hab.* Southwestern Mexico, north to Mazatlan.

T. citreolus Gould. **Citreoline Trogon.**[3]

Family MOMOTIDÆ.—The Motmots. (Page 271.)

Genera.

(Characters same as those given for the Family)... **Momotus.** (Page 277.)

Genus MOMOTUS Brisson.[4] (Page 277, pl. LXXXI., fig. 2.)

Species.

Common Characters.—General color plain greenish, tinged more or less with olive; rather lengthened and stiffened ear-coverts chiefly black, but partly blue; a narrow tuft of rather lengthened and somewhat stiffened black feathers (sometimes edged with blue) in middle of chest; lengthened and (usually) spatulate middle tail-feathers verditer-blue toward ends, their tips black.

*a*¹. Top of head bright blue or green, encircled with deep black; lores deep black; lower parts, including flanks, anal region, and under tail-coverts, olive-greenish, sometimes tinged with russet; ear-coverts black, bordered above by a line of bright light greenish blue or bluish green (this sometimes almost obsolete).

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[1] *Trogon puella* Gould, P. Z. S. 1845, 18.

[2] *Trogon melanocephalus* Gould, Mon. Trog. 1838, pl. 12.

[3] *Trogon citreolus* Gould, P. Z. S. 1835, 30.

[4] *Momotus* Briss., Orn. iv. 1760, 465. Type, *Ramphastos momota* Linn.

b^1. Whole top of head bright verditer-blue, varying to verdigris-green, duller centrally; length about 14.20–15.00, wing 5.30–5.70, middle tail-feathers 8.80–9.15, exposed culmen 1.40–1.55. *Hab.* Eastern Mexico, north to Rio Grande Valley (Nuevo Leon).

M. cæruleiceps Gould. **Blue-crowned Motmot.**[1]

b^2. Top of head deep black centrally, this entirely surrounded by bright verditer-blue, the latter bordered exteriorly, from eyes backward, by rich purplish ultramarine-blue; size about the same as in *M. cæruleiceps*. *Hab.* Central America, from Veragua to southern Mexico.

M. lessonii Less. **Lesson's Motmot.**[2]

a^2. Whole top of head and hind-neck uniform rufous; lores dull grayish, mixed with dusky; lower parts pale glaucous-green (sometimes tinged with buffy anteriorly), changing to dull whitish on flanks, anal region, and under tail-coverts; a large spot of purplish smalt-blue underneath eye, on malar region, and ear-coverts usually largely ultramarine- or smalt-blue; length about 12.00–13.00, wing 4.50–5.00, middle tail-feathers 6.50–7.50, exposed culmen 1.40–1.60. *Hab.* Southwestern Mexico, north to Mazatlan.

M. mexicanus Swains. **Rufous-crowned Motmot.**[3]

Family **ALCEDINIDÆ.**—The Kingfishers. (Page 271.)

Genera.

(Characters same as those given for the Family)........ **Ceryle.** (Page 278.)

Genus **CERYLE** Boie. (Page 278, pl. LXXX., figs. 2, 3.)

(*Nest* at extremity of horizontal burrow in earth-banks. *Eggs* usually 6, ovate or oval, pure white, with smooth, somewhat glossy surface.)

Species.

a^1. Wing 6.00, or more; tarsus about as long as hind-toe, much shorter than inner anterior toe; plumage without metallic gloss. (Upper parts plumbeous-blue, or bluish plumbeous, more or less streaked with black, especially on top of head, the tail-feathers transversely spotted with white, these markings usually more or less hidden in closed tail; chin, throat, and collar round hind-neck pure white.) (Subgenus *Streptoceryle* Bonap.)

b^1. Wing more than 7.00, culmen more than 3.00; belly, sides, and flanks uniform rufous; outer webs of quills without white spotting at base. *Adult male:* Lower tail-coverts and anal region pure white, and rufous of belly covering breast, and reaching to white of throat. *Adult female:* Lower tail-coverts and anal region rufous; breast plumbeous-blue, usually bordered behind by white. Length about 15.50–17.00, wing about 7.50. *Hab.* Tropical America in general (except West Indies), north to southern Mexico, accidentally to southern Texas.

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[1] *Momotus cæruleiceps* Gould, P. Z. S. 1836, 18.

[2] *Momotus lessonii* Less., Rev. Zool. June, 1842, 174 (Realejo, Nicaragua).

[3] *Momotus mexicanus* Swains., Philos. Mag. n. s. i. 1827, 442.

[390.1.] **C. torquata** (LINN.). **Great Rufous-bellied Kingfisher.**[1]

b^2. Wing less than 7.00, culmen less than 3.00; belly white; outer webs of quills spotted with white toward base. *Adult male:* Above bluish plumbeous, the tail transversely spotted with white, and basal half of primaries coarsely spotted with same; a white spot on sides of forehead, above lores; lower parts pure white, interrupted by a broad band of bluish plumbeous across breast; white of throat encircling hind-neck. *Adult female:* Similar to the male, but sides and flanks, and a more or less strongly indicated (never complete?) band across belly, rufous. *Young:* Similar to adult, but the male with the breast-band and sides tinged with rusty. Length 11.00–14.50, wing 6.00–6.50, tail 3.80–4.30, culmen 2.00, or more. *Eggs* 1.34 × 1.05. *Hab.* Whole of North America, and south to Panama and the West Indies.

390. **C. alcyon** (LINN.). **Belted Kingfisher.**

a^2. Wing less than 4.00; tarsus longer than hind-toe, and almost as long as inner anterior toe; plumage metallic greenish above. (Subgenus *Chloroceryle* KAUP.)

Adult female: Above dark metallic bottle-green, interrupted by a white collar across hind-neck, the secondaries, primaries, and tail spotted with white, in transverse series; lower parts pure white, interrupted by a band of dark metallic green across breast; sides spotted with dark greenish, these spots continued as an interrupted band across belly. *Adult male:* Similar to the female, but green band across breast replaced by one of deep rufous; no green spots across belly. *Young male:* Similar to adult female, but breast more or less tinged with rusty. Length 6.75–8.50, wing 3.40–3.50, tail 2.70–2.75, exposed culmen 1.65–1.85. *Eggs* .96 × .73. *Hab.* Middle America and northwestern South America, north to southwestern border of United States (southern Texas to Arizona), south to western Peru.

391. **C. americana septentrionalis** SHARPE. **Texan Kingfisher.**

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[1] *Alcedo torquata* LINN., S. N. ed. 12, i. 1766, 180. *Ceryle torquata* BONAP., P. Z. S. 1837, 108.

ORDER **PICI**.—THE WOODPECKERS, WRYNECKS, ETC.

(Page 3.)

Families.

(Characters same as those given for the Order).................. **Picidæ.** (Page 280.)

FAMILY **PICIDÆ**.—THE WOODPECKERS. (Page 280.)

Genera.

*a*¹. Outer hind-toe longer than outer anterior toe.
  *b*¹. Two hind-toes.
    *c*¹. Conspicuously crested, and size very large (wing 7.00, or more). **Campephilus.** (Page 281.)
    *c*². Without crest, and size small (wing not more than 5.00).
      *d*¹. Nasal groove extending nearly to tip of bill; terminal half of bill not distinctly compressed.
        *e*¹. Tongue greatly extensile; plumage much varied with black (or brown) and white, the latter prevailing on lower parts. **Dryobates.** (Page 281.)
        *e*². Tongue very slightly extensile; plumage uniform black, with white head and white spotting on basal portion of quills. **Xenopicus.** (Page 286.)
      *d*². Nasal groove running out on cutting-edge of upper mandible, about half-way to tip; terminal portion of bill distinctly compressed. Tongue scarcely extensile......... **Sphyrapicus.** (Page 288.)
  *b*². Only one hind-toe.
    Bill broad and much flattened...................... **Picoides.** (Page 286.)
*a*². Outer hind-toe not longer than outer anterior toe.
  *b*¹. Head conspicuously crested; large (wing not less than 7.25—usually much more).. **Ceophlœus.** (Page 289.)
  *b*². Head not crested; small or medium (wing less than 7.25—usually much less).
    *c*¹. Upper mandible with a distinct lateral ridge and nasal groove, the tip more or less truncated; plumage of lower parts without spots, the under surface of quills and tail-feathers without yellow or red. **Melanerpes.** (Page 290.)
    *c*². Upper mandible without distinct lateral ridge or nasal groove, the tip scarcely or not at all truncated; plumage of lower parts spotted with black; under surface of quills and tail-feathers chiefly yellow or reddish, the shafts brighter yellow or red. **Colaptes.** (Page 295.)

GENUS **CAMPEPHILUS** GRAY. (Page 280, pl. LXXXII., fig. 1.)

Species.

COMMON CHARACTERS (of North American species).—Bill ivory-yellow or whitish; plumage mainly black, with a white scapular stripe and other markings, the occipital crest scarlet or glossy black.

*a*¹. Plumage glossy black, with scapulars, secondaries, ends of shorter primaries, and under wing-coverts pure white; crest of female entirely glossy blue-black.

*b*¹. A white stripe down each side of neck; nasal tufts white.

*c*¹. White neck-stripe not extending to the bill; nasal tufts much larger; sixth primary not extensively, if at all, white terminally; length (fresh) 19.75–21.00, extent of wings 30.00–32.00, wing 9.00–10.00, tail 6.25–6.80, culmen 2.60–2.80. *Eggs* 1.37 × .99. *Hab.* Formerly, southern Atlantic and Gulf States and lower Mississippi Valley, north to North Carolina, eastern Missouri, southern Illinois and Indiana, and west to eastern Texas; now apparently confined to restricted localities in Gulf States (including Florida) and lower Mississippi Valley....... 392. **C. principalis** (LINN.). **Ivory-billed Woodpecker.**

*c*². White neck-stripe continued nearly to rictus; nasal tufts much smaller; sixth primary extensively white at tip; wing 9.50–9.70, tail 6.50–7.00, exposed culmen 2.30–2.40. *Hab.* Cuba.

C. principalis bairdi (CASS.). **Cuban Ivory-billed Woodpecker.**[1]

*b*². No white stripe on side of neck; nasal tufts black; length about 23.00–24.00, wing 11.70–13.20, tail 8.00–9.50, exposed culmen 2.70–3.60. *Hab.* Western Mexico, north, along Sierra Madre, nearly if not quite to United States boundary; southeastern Arizona?

C. imperialis (GOULD). **Imperial Woodpecker.**[2]

*a*². Plumage chiefly dull brownish black, the lower parts, except breast, barred with black and pale fulvous; crest of female bright red (whole head red in male). Length about 12.00–13.00, wing 7.50–8.00, tail 4.80–5 20, exposed culmen 1.85–2.20. *Hab.* Southern Mexico, and south to Costa Rica.

C. guatemalensis (HARTL.). **Guatemalan Ivory-billed Woodpecker.**[3]

GENUS **DRYOBATES** BOIE. (Page 280, pl. LXXXIII., figs. 1–2; pl. LXXXVI., fig. 1.)

Species.

COMMON CHARACTERS.—Above black or brown, more or less spotted or otherwise varied with white; lateral tail-feathers white, with or without black bars; sides of head striped with black and white; lower parts whitish (sometimes stained a light brownish or smoky tint), usually more or less varied with dusky. *Adult* male with more or less of red on head, usually on occiput. *Adult* female without any red on head. *Young* with crown more or less extensively red or yellow.

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[1] *Campephilus bairdi* CASS., Proc. Ac. Nat. Sci. Phila. 1863, 322. *C. principalis*, var. *bairdi* B. B. & R. Hist. N. Am. B. ii. 1874, 496.

[2] *Picus imperialis* GOULD, P. Z. S. ii. 1832, 140. *Campephilus imperialis* BAIRD, B. N. Am. 1858, 83.

[3] *Picus guatemalensis* HARTL., Rev. Zool. 1844, 214. *Campephilus guatemalensis* SCL., Cat. Am. B. 1862, 331.

*a*¹. Back varied with white.

- *b*¹. Back striped or marked longitudinally with white; lower parts without black markings, except sometimes on sides of breast or, more rarely, on flank.
  - *c*¹. Lateral tail-feathers without black bars; culmen 1.00, or more; wing usually more than 4.00.
    - *d*¹. Middle and greater wing-coverts and tertials conspicuously spotted with white.
      - *e*¹. Lores partly or entirely black, the white superciliary stripe being thus cut off from the white or pale brownish of the nasal tufts.
        - *f*¹. Wing more than 5.00, culmen 1.40, or more.

          Length about 10.00–11.00, wing 5.02–5.40 (5.25), tail 3.60–3.80 (3.70), culmen 1.40–1.62 (1.49). *Hab.* Northern North America, west to Alaska and British Columbia, south, in winter, to northern border of United States.

          393*a*. **D. villosus leucomelas** (Bodd.). **Northern Hairy Woodpecker.**
        - *f*². Wing not more than 5.00; culmen not more than 1.35.
          - *g*¹. Larger: Length about 8.50–9.00, wing 4.50–5.00 (4.70), tail 3.10–3.60 (3.37), culmen 1.18–1.35 (1.24). *Eggs* .93 × .71. *Hab.* Eastern United States, except south Atlantic and Gulf States.

            393. **D. villosus** (Linn.). **Hairy Woodpecker.**
          - *g*². Smaller: Length about 8.00–8.75, wing 4.40–4.80 (4.51), tail 3.00–3.20 (3.04), culmen 1.12–1.24 (1.14). *Hab.* South Atlantic and Gulf States, north to Georgia and Tennessee, west to central Texas.

            393*b*. **D. villosus audubonii** (Swains.). **Southern Hairy Woodpecker.**
      - *e*². Lores chiefly or entirely white, thus connecting the white superciliary stripe with the white or light brownish of the nasal tufts.

        Length about 7.00–8.00, wing 3.95–4.35 (4.12), tail 2.85–3.10 (2.95), culmen 1.00–1.22 (1.10). *Hab.* Bahamas.

        D. villosus maynardi Ridgw. **Bahaman Hairy Woodpecker.**[1]

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[1] *Picus insularis* Maynard, The Nat. in Florida, i. No. 4, 1885; not of Gould, 1862.

*d*². Wing-coverts and tertials plain black, or else with very little of white spotting.

*e*¹. Larger, with color of lower parts varying from pure white to smoky grayish; length about 9.00–10.00, wing 4.70–5.30 (5.00), tail 3.20–3.75 (3.43), culmen 1.12–1.40 (1.26). *Eggs* .96 × .75. *Hab.* Western United States, east to Rocky Mountains, south to table-lands of Mexico.

393*c*. **D. villosus harrisii** (Aud.).

(41.) **Harris's Woodpecker.**

*e*². Smaller, with lower parts usually deep smoky brown (rarely smoky gray); length about 7.00–8.00, wing 3.80–4.90 (4.24), tail 2.45–3.20 (2.75), culmen .95–1.18 (1.00). *Hab.* Central America, south to Veragua, north to eastern Mexico (Puebla and Vera Cruz).

D. villosus jardinii (Malh.). **Jardine's Woodpecker.**[1]

*c*². Lateral tail-feathers with a greater or less number of black bars; culmen not more than .80; wing usually less than 4.00.

*d*¹. Middle and greater wing-coverts conspicuously spotted with white; length about 6.25–7.00, wing 3.40–4.05 (3.72), tail 2.25–2.90 (2.51), culmen .68–.82 (.73). *Eggs* .76 × .59. *Hab.* Northern and eastern North America, and, sporadically, western North America (Colorado, California, etc.) also.

394. **D. pubescens** (Linn.). **Downy Woodpecker.**

*d*². Middle and greater wing-coverts plain black, or else but slightly spotted with white; length about 6.25–7.00, wing 3.55–4.15 (3.76), tail 2.30–2.70 (2.51), culmen .70–.80 (.75). *Eggs* .74 × .56. *Hab.* Western United States, east to Rocky Mountains, north to British Columbia, south to New Mexico.

394*a*. **D. pubescens gairdnerii** (Aud.).

(42.) **Gairdner's Woodpecker.**

*b*². Back barred with white; sides and flanks spotted or streaked (or both) with black.

*c*¹. Ear-coverts entirely white; lores black; male with a narrow (usually concealed) streak of red along each side of occiput.

Length about 7.50–8.50, wing 4.50–5.00, tail 3.20–3.50, exposed culmen .75–.85. *Eggs* .95 × .69. *Hab.* Southeastern United States, north regularly to North Carolina, Tennessee (irregularly to New Jersey), and northern Arkansas, west to Indian Territory and eastern Texas.

395. **D. borealis** (Vieill.). **Red-cockaded Woodpecker.**

*c*². Ear-coverts black or brown, bordered above and below by a white stripe; lores whitish, dull grayish, or dusky; adult males with a patch of red extending entirely across the occiput.

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[1] *Picus jardinii* Malh., Rev. Zool. 1848, 374.

*d*¹. Back barred with black and white; wings black, spotted and barred with white; middle line of breast unspotted.

*e*¹. Forehead smoky brownish, like nasal tufts (the ground-color sometimes nearly hidden, however, by whitish spotting); crown often speckled, but not streaked, with white; lateral tail-feathers with inner web (sometimes outer web also) barred for entire length, or at least for all of exposed portion; ground-color of lower parts usually smoky white, or pale smoky brownish. *Adult male* with whole crown red, or spotted with red (unless the red tips to feathers happen to be worn off), the red immediately preceded by a white speck or spot.

*f*¹. Outer tail-feathers barred regularly with black, on both webs, for whole length.

*g*¹. Smaller (length about 6.00–6.75, wing less than 3.90).

*h*¹. Wing 3.80–3.85 (3.82), tail 2.30–2.40 (2.33), exposed culmen .70–.79 (.74); black stripes on side of head narrower, the malar stripe usually whitish anteriorly; black bars on back usually appreciably narrower than the white ones; scarlet on head of male lighter. *Hab.* Southeastern Mexico (Vera Cruz, Puebla, etc.).

D. scalaris (Wagl.). **Ladder-backed Woodpecker.**[1]

*h*². Wing 3.30–3.55 (3.44), tail 2.10–2.20 (2.14), exposed culmen .60–.75 (.69); black stripes on sides of head broader, the malar stripe usually dusky or blackish anteriorly; black bars on back usually a little broader than the white ones; scarlet on head of male darker. *Hab.* Yucatan.

D. scalaris parvus (Cabot). **Cabot's Ladder-backed Woodpecker.**[2]

*g*². Larger (length 7.00–7.75, wing 3.90–4.25).

Wing 3.90–4.25 (4.06), tail 2.45–2.75 (2.59), exposed culmen .83–.93 (.87); in coloration not constantly different from true *scalaris*, except that the black stripes on sides of head are usually broader, the lower one usually more extended toward sides of breast. *Eggs* .82 × .63. *Hab.* Table-lands of Mexico, and southern border of United States, from Texas to Arizona.

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[1] *Picus scalaris* Wagl., Isis, 1829, 511.

[2] *Picus parvus* Cabot, Bost. Jour. N. H. v. 1849, 90.

396. **D. scalaris bairdi** (Scl.). **Texan Woodpecker.**[1]

*f*². Outer tail-feather barred with black only on terminal half or less, except sometimes on inner web.

*g*¹. Primary coverts with at least one row of small white spots.

*h*¹. Larger, with slenderer bill and much broader black bars on back (bars about .15–.20 wide); length about 7.25–7.75, wing 3.95–4.10 (4.02), tail 2.70–2.90 (2.81), exposed culmen .91–.94 (.93). *Hab.* Southern portion of Lower California............ 396*a*. **D. scalaris lucasanus** (Xantus). **Saint Lucas Woodpecker.**

*h*². Smaller, with stouter bill and much narrower black bars on back (bars only about .10 wide); length about 6.25–6.50, wing 3.70–3.75 (3.72), tail 2.20–2.40 (2.30), culmen .70–.80 (.75). *Hab.* Western Mexico (vicinity of Mazatlan).

D. scalaris sinaloensis Ridgw. **Mazatlan Woodpecker.**[2]

*g*². Primary coverts plain dusky, without trace of white on outer webs; black bars on back broad, as in *D. lucasanus;* length about 6.75–7.00, wing 3.80–3.95 (3.88), tail 2.45–2.55 (2.50), exposed culmen .74–.88 (.82). *Hab.* Tres Marias Islands, western Mexico.

D. scalaris graysoni Baird. **Grayson's Woodpecker.**[3]

*e*². Forehead deep black, abruptly defined against the white, smoky white, or dull buff of nasal tufts; crown often streaked, but not speckled, with white; lateral tail-feathers with not more than two distinct black bars, these near end (a third occasionally indicated); ground-color of lower parts nearly pure white; *adult male* with whole crown black, or black streaked with white, the red being confined to occiput and nape.

Length about 7.00, wing 3.90–4.20 (4.06), tail 2.60–3.05 (2.78), exposed culmen .77–.82 (.80). *Eggs* .84 × .64. *Hab.* California.

397. **D. nuttallii** (Gamb.). **Nuttall's Woodpecker.**

*d*². Back and wings brown, the former barred or transversely spotted with white, and primaries spotted with same; whole breast spotted or broadly streaked with dark brown. *Hab.* Southeastern Mexico (Jalapa, etc.).

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[1] *Picus bairdi* "(Sclater)" Malh., Mon. Pic. i. 1861, 118, pl. 27, figs. 7, 8.

[2] New subspecies.

[3] *Picus scalaris* var. *graysoni* Baird, Hist. N. Am. B. ii. 1874, 515 and 517 (in text).

D. stricklandi (MALH.). **Strickland's Woodpecker.**[1]

a^2. Back without any white. Upper parts plain brown or light sepia, the quills, also inner webs of secondaries, spotted with white; whole breast and sides spotted with dark brown, the flanks and under tail-coverts barred or transversely spotted with the same. *Adult males* with a rather narrow occipital band of red, as in *D. villosus* and *D. pubescens; young males* with nearly whole top of head red.

b^1. Larger: Length 7.40–8.40, wing 4.40–4.65 (4.49), tail 2.55–2.95 (2.81), exposed culmen .90–1.05 (.98). *Hab.* Southern Arizona and adjacent portion of northwestern Mexico.

398. **D. arizonæ** (HARGITT). **Arizona Woodpecker.**[2]

b^2. Smaller: Length 6.25, wing 4.10, tail 2.60, exposed culmen .78. *Hab.* Southwestern Mexico (Sierra Madre of Colima).

D. arizonæ fraterculus RIDGW. **Colima Woodpecker.**[3]

GENUS **XENOPICUS** BAIRD. (Page 280, pl. LXXXIV., fig. 1.)

Species.

Adult male: Head, neck (except hinder part), upper part of chest, and basal portion of quills white; occiput with a transverse patch or broad band of bright red; rest of plumage uniform black. *Adult female:* Similar to the male, but without any red on head. *Young male:* Similar to adult, but black of a duller shade, and red of head consisting of a squarish patch on middle of crown, instead of a band across occiput. Length about 8.90–9.40, wing 5.00–5.10, tail 4.00–4.05. *Eggs* .95 × .71. *Hab.* Mountains of Pacific coast, including Sierra Nevada (both slopes), from Washington Territory to southern California.

399. **X. albolarvatus** (CASS.). **White-headed Woodpecker.**

GENUS **PICOIDES** LACÉPÈDE. (Page 280, pl. LXXXII., fig. 2.)

Species.

COMMON CHARACTERS.—Above black (head glossed with bluish), the quills spotted with white (back also varied with white in some species); a broad white stripe on side of head beneath eye and ear-coverts, and beneath this a more or less distinct black stripe; lower parts white, the sides and flanks barred with black; lateral tail-feathers white (without distinct bars in American species); adult male with yellow patch on crown.

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[1] *Picus* (*Leuconotopicus*) *stricklandi* MALH., Rev. Zool. viii. 1845, 373. (Not *Dryobates stricklandi* of the A. O. U. Check List, No. 398.)

[2] *Picus arizonæ* HARGITT, Ibis, April, 1886, 115 (= No. 398, "*Dryobates stricklandi* MALH." of the A. O. U. Check List, but not *Picus stricklandi* MALH.).

[3] New subspecies; type, No. 30105, ♀ ad., U. S. Nat. Mus., Sierra Nevada of Colima, April, 1863, J. Xantus.

*a*¹. No white on back nor on top of head.

Length about 9.50–10.00, wing 4.85–5.25, tail 3.60, culmen 1.40–1.60. *Eggs* .96 × .72. *Hab.* Northern North America, south to northern border of United States, and farther on high mountain ranges, especially westward, where breeding on Sierra Nevada south to at least 39°.

400. **P. arcticus** (Swains.). **Arctic Three-toed Woodpecker.**

*a*². Back (especially along middle line) varied with white, and top of head also usually more or less mixed with white.

*b*¹. Back with detached white bars, always less in width than the black interspaces; white postocular streak or stripe usually indistinct, black bars on sides usually broader, and adult female frequently with whole top of head solid black—never very conspicuously varied with white.

Wing-coverts always uniform black; length about 9.00, wing 4.40–4.60 (4.37), tail 3.10–3.75 (3.34), culmen 1.10–1.25 (1.17). *Eggs* .92 × .70. *Hab.* Northern North America east of Rocky Mountains; south, in winter, to northern border of United States.

401. **P. americanus** Brehm. **American Three-toed Woodpecker.**

*b*². Back with more or less confluent white bars, always broader than black interspaces, or else longitudinally blotched or striped with white; white postocular streak usually broader and more conspicuous; black bars on sides usually narrower, and adult female usually with top of head much varied with white.

*c*¹. Back usually distinctly barred with black (rarely continuously white along middle line), secondaries more distinctly spotted with white (sometimes wing-coverts also spotted, more or less numerously, with white), white spots on quills larger, and female sometimes with white prevailing on top of head; length about 9.50, wing 4.50–4.70 (4.58), tail 3.10–3.75 (3.41), culmen 1.10–1.25 (1.22). *Hab.* Alaska, north of the mountains, south to Nushagak.

401*a*. **P. americanus alascensis** (Nelson). **Alaskan Three-toed Woodpecker.**

*c*². Back continuously white along the middle line, with few if any black bars, the markings being mostly longitudinal; secondaries less distinctly spotted with white, white spots on quills smaller, wing coverts never (?) spotted or speckled with white, and adult female never (?) with much white streaking on top of head; length about 9.50, wing 4.65–5.00 (4.93), tail 3.20–3.65 (3.49), culmen 1.15–1.30 (1.26), the bill more slender than in *alascensis*. *Hab.* Rocky Mountains, north to Fort Liard, Fort Simpson, Fort Kenai, and Kadiak, south to New Mexico......... 401*b*. **P. americanus dorsalis** Baird. **Alpine Three-toed Woodpecker.**

GENUS **SPHYRAPICUS** BAIRD. (Page 280, pl. LXXXIII., fig. 3.)

Species.

COMMON CHARACTERS.—Belly plain yellowish or white; upper parts black, more or less varied with white, the inner webs of middle pair of tail-feathers largely or chiefly white.

*a*¹. Rump mixed black and white; belly pale sulphur-yellow, or whitish; sexes not very different in color.

*b*¹. Chest with a black patch, and sides of head with white stripes in adult. *Adult male* with crown, forehead, chin, and throat crimson-red. *Adult female* with chin and at least part of throat (entire throat in *S. varius*) white, the forehead and crown sometimes (in individuals of *S. varius*) glossy black.

*c*¹. Nape brownish white. *Adult male* with red of throat separated from the white stripe on cheeks by a distinct and continuous black malar stripe, connecting with the black patch on chest. *Adult female* with chin and throat entirely white, and red sometimes wanting on top of head. *Young:* Black, red, and white of head, neck, and chest nearly or quite wanting, the general color being a dull light mottled brownish tint, the pattern of the adult but faintly indicated. Length 7.75–8.75, wing (male) 4.80–5.00 (4.92), tail 2.90–3.20 (3.07), culmen 1.00–1.08 (1.04). *Eggs* .88 × .67. *Hab.* Northern and eastern North America, breeding from northern United States northward; south, in winter, to West Indies, Mexico (both coasts), and Guatemala.

402. **S. varius** (LINN.). **Yellow-bellied Sapsucker.**

*c*². Nape more or less tinged with red (often with a distinct red band or transverse patch). *Adult male* with red of throat extending, in middle portion, quite to the white cheek-stripe, the black malar stripe being thereby obliterated, except at extremities. *Adult female* with lower part of throat (sometimes nearly whole throat) red. Length 8.00–8.75, wing (male) 4.92–5.10 (5.03), tail 3.10–3.40 (3.26), culmen .95–1.02 (.99). *Eggs* .90 × .67. *Hab.* Rocky Mountain district of United States, west to eastern slope of Sierra Nevada and Cascade ranges, south into mountains of Mexico.

402*a*. **S. varius nuchalis** BAIRD. **Red-naped Sapsucker.**

*b*². Chest without black patch, and sides of head without white stripes. *Adult* (*sexes alike*): Head, neck, and chest uniform red, or with white markings and black chest-patch of *S. varius* and *S. nuchalis* showing indistinctly through the plumage. *Young:* Similar to same stage of *S. varius* and *S. nuchalis*, but darker, the head, etc., usually with a pronounced dull purplish red suffusion. Length about 8.50–9.25, wing (male) 4.70–5.05 (4.88), tail 3.10–3.50 (3.28), culmen 1.00–1.08 (1.03). *Eggs* .92 × .69. *Hab.* Pacific coast district, south to Fort Tejon, California, north to southern Alaska.

403. **S. ruber** (Gmel.). **Red-breasted Sapsucker.**

*a*². Rump plain white; belly bright sulphur-yellow or lemon-yellow (except in young); sexes extremely dissimilar in plumage.

Adult male: General color glossy black (with blue gloss, except on wings and tail), relieved by two white stripes on side of head, a large white patch covering middle and greater wing-coverts, and small white spots on quills; throat with a median stripe of bright red. *Young male:* Similar to adult, but black duller and everywhere without gloss, belly whitish, or very faintly yellowish, and throat-stripe white. *Adult female:* Head nearly uniform light brown, the throat sometimes (but rarely) with a red stripe; sides, flanks, and upper parts regularly barred with black and white; no white patch on wing-coverts; chest usually with more or less of a black patch. *Young female:* Similar to adult, but markings less sharply defined, colors duller, the belly whitish, and chest without black patch. Length 9.00–9.75, wing 5.25–5.50, tail 3.80–3.90, culmen 1.00–1.20. *Eggs* .95 × .68. *Hab.* Western United States, from (and including) Rocky Mountains to Pacific coast.

404. **S. thyroideus** (Cass.). **Williamson's Sapsucker.**

Genus **CEOPHLŒUS** Cabanis. (Page 280, pl. LXXXIV., fig. 2.)

Species.

Common Characters.—General color dull brownish black, or dark sooty slate, the under wing-coverts, throat, and one or more stripes on side of head (including one down side of neck) whitish; *male* with whole top of head, including occipital crest, and a broad malar stripe, bright red; *female* with only the crest red, the forehead, crown, and malar stripe being brownish or dusky.

*a*¹. No white scapular stripe; lower parts uniform dusky, the flanks usually indistinctly barred with whitish; wing 8.90, or more.

Adult male: Uniform dull dusky slate, varying to sooty blackish, the chin and throat, two stripes on side of head, one on side of neck, under wing-coverts, and basal half of quills, white, more or less, especially on hidden portions, tinged with sulphur-yellow; whole top of head, including occipital crest, and a broad malar stripe, bright red. *Adult female:* Similar to the male, but malar stripe, forehead, and crown brownish gray or grayish brown. Length about 15.15–19.00, extent of wings 25.00–29.25, wing 8.90–10.00, tail 6.60–7.40, culmen 2.10–2.65. *Eggs* 1.28 × .95. *Hab.* Whole of North America, in heavily-wooded districts.

405. **C. pileatus** (Linn.). **Pileated Woodpecker.**

*a*². A white scapular stripe; lower parts, posterior to breast, barred with blackish

and pale fulvous, or brownish white; wing less than 7.50. *Hab.* Central America and Mexico, north to Mirador and Mazatlan, south to Costa Rica.
C. scapularis (VIG.). **Delattre's Woodpecker.**[1]

GENUS MELANERPES SWAINSON. (Page 280, pl. LXXXV., figs. 1-3.)

Species.

a^1. Back, scapulars, and wing-coverts plain glossy blackish (grayish, indistinctly barred with dusky in young of *M. erythrocephalus*).

b^1. Lower parts, rump, and upper tail-coverts white; plumage of neck and lower parts soft, blended; wing less than 6.00. (Subgenus *Melanerpes.*)

c^1. *Adult male:* Whole head, neck, and chest uniform rich crimson, bordered below, against white of breast, by black (this sometimes concealed); wing-coverts, back, and scapulars glossy blue-black; lower back, rump, upper tail-coverts, lower parts, and whole exposed portion of secondaries uniform pure white, the belly usually tinged with orange or reddish. *Adult female:* Similar to the male, but with inner secondaries more or less spotted, in transverse series, with black, and black collar between white of breast and crimson of chest more conspicuous. *Young:* Head, neck, and chest brownish gray, streaked with dusky; secondaries crossed near ends by one or more black bands; wing-coverts, scapulars, and back dull grayish, barred with dusky. Length about 9.25-9.75, wing 5.30-5.70, tail 3.60-3.75. *Eggs* .99 × .76. *Hab.* Eastern United States, west to Rocky Mountains (occasionally still farther westward); rare or casual east of Hudson River.
406. **M. erythrocephalus** (LINN.). **Red-headed Woodpecker.**

c^2. *Adult male:* Upper parts in general, ear-coverts, and broad band across chest, glossy greenish blue-black; feathers round base of bill, including chin and upper part of throat, dull black; lower parts generally, rump, tail-coverts, patch on base of primaries, forehead, and thence to lower part of throat, white, the last more or less tinged with sulphur-yellow (sometimes brightly of this color); crown and occiput crimson-red. *Adult female:* Similar to the male, but fore-part of crown glossy blue-black. *Young:* Similar to adults, with same sexual difference in color of crown, but colors duller.

d^1. Width of white or yellow frontal patch and black crown-patch in female together decidedly greater than width (longitudinally) of red occipital patch; white or yellow frontal band not less than .30 wide; wing averaging decidedly more than 5.50.

e^1. Greater part, or whole, of chest streaked with white; wing 5.30-5.90 (5.54), tail 3.10-3.60 (3.42), culmen, 1.10-1.22 (1.16). *Hab.* Central America and Southeastern Mexico, south to Costa Rica, north to Jalapa, Cordoba, Tehuantepec, etc.

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[1] *Picus scapularis* VIG., Zool. Jour. iv. 1828-29, 354.

M. formicivorus (Swains.). **Striped-breasted Woodpecker.**[1]

*e*². Greater part of chest uniform glossy black, the white streaks being confined to posterior half, or less; length about 8.50–9.50, wing 5.30–6.00 (5.61), tail 3.00–4.00 (3.64), culmen 1.00–1.40 (1.16). *Eggs* 1.00 × .75. *Hab.* Central, northern, and western Mexico and contiguous border of United States, from western Texas to California, and north along Pacific coast to southern Oregon; south, through western Mexico, to Jalisco (Sierra Nevada of Colima?); northern Lower California............. 407. **M. formicivorus bairdi** Ridgw. **Californian Woodpecker.** (43.)

*d*². Width of white or yellow frontal band and black crown band in female together decidedly less than width (longitudinally) of red occipital patch; white or yellow frontal band less than .30 wide; wing averaging decidedly less than 5.50.

Greater part of chest streaked with white; throat usually decidedly brighter sulphur-yellow than in other forms; length about 8.25–9.00, wing 5.20–5.55 (5.38), tail 3.30–3.50 (3.37), culmen 1.15–1.25 (1.20). *Hab.* Southern portion of Lower California.... 407*a*. **M. formicivorus angustifrons** Baird. **Narrow-fronted Woodpecker.**

*b*². Lower parts chiefly pinkish red (in adult) or grayish (in young), rump and upper tail-coverts glossy blackish; plumage of lower parts harsh, hair-like; wing more than 6.00. (Subgenus *Asyndesmus* Coues.)

Adult (sexes alike): Upper parts, lower tail-coverts, and thighs uniform dark metallic greenish, or greenish black; fore-part of head, including cheeks, dark crimson; chest and collar round hind-neck light hoary grayish; breast, belly, sides, and flanks pinkish red, lighter anteriorly. *Young:* No red on head, which is dull blackish above and on cheeks, and dusky grayish on throat; chest dirty light grayish; sides dusky; belly dull reddish. Length 10.50–11.50, wing 6.50–6.80, tail 4.40–4.70. *Eggs* 1.03 × .80. *Hab.* Western United States, east to Black Hills and Rocky Mountains.

408. **M. torquatus** (Wilson). **Lewis's Woodpecker.**

*a*². Back, scapulars, and wings barred with white. (Subgenus *Centurus* Swainson.)

*b*¹. Sides distinctly barred with blackish; lesser wing-coverts not varied with white. *Hab.* Central America, north to southern Mexico, south to Veragua.

M. pucherani (Malh.). **Pucheran's Woodpecker.**[2]

*b*². Sides without bars; lesser wing-coverts varied with white.

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[1] *Picus formicivorus* Swains., Philos. Mag. i. 1827, 439. *Melanerpes formicivorus* Bonap., P. Z. S. 1837, 109.

[2] *Zebrapicus pucherani* Malh., Rev. Zool. 1849, 542; Mon. Pic. ii. 1862, 227, pl. 103, figs. 1, 2.

c^1. A blackish patch above or surrounding eye, or else (in female of *M. hypopolius*) entire occiput and hind-neck smoky brownish gray.

d^1. Hind-neck red or yellow; middle of belly red or yellow.

e^1. Middle of belly yellow.

Adult male: Crown and occiput bright red, the hind-neck rich orange or yellow; orbits surrounded with black, broader above and behind the eye; rest of head smoky grayish, more or less tinged anteriorly with bright yellow. *Adult female:* Similar to the male, but red of crown and occiput replaced by grayish, sometimes mixed with black posteriorly. Wing 4.50–4.90, tail 3.10–3.60, culmen .95–1.10. *Hab.* Southern and western Mexico, from Puebla north to Mazatlan.

M. elegans (SWAINS.). **Elegant Woodpecker.**[1]

e^2. Middle of belly red.

f^1. Larger (wing 5.50 or more); plumage much tinged or stained, above and below, with ochraceous-yellow. *Hab.* Cuba.

M. superciliaris (TEMM.). **Superciliary Woodpecker.**[2]

f^2. Smaller (wing less than 5.50); plumage not distinctly stained with ochraceous-yellow.

g^1. Darker, the forehead dull white or pale smoky grayish or brownish, the nasal tufts only partly reddish or yellowish, the white bars of back, etc., stained with pale brownish. *Hab.* Abaco Island, Bahamas.

M. blakei RIDGW. **Blake's Woodpecker.**[3]

g^2. Paler, the forehead pure white, the nasal tufts wholly bright red, white bars of back, etc., very slightly if at all tinged with brownish, lower parts paler, etc. *Hab.* Watling Island, Bahamas.

M. nyeanus RIDGW. **Nye's Woodpecker.**[4]

d^2. Hind-neck soft smoky brownish gray; middle of belly whitish.

Adult male with a patch of red on crown and a tinge of red on cheeks; adult female without red on crown, and with red on cheeks more distinct. *Hab.* Southern Mexico (Puebla, etc.).

M. hypopolius (WAGL.). **Gray-breasted Woodpecker.**[5]

c^2. No black over or around eye.

d^1. Middle of belly red.

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[1] *Picus elegans* SWAINS., Philos. Mag. i. 1827, 439. *Centurus elegans* GRAY, Gen. B. ii. 1849, 442.

[2] *Picus superciliaris* TEMM., Pl. Col. livr. 73, 1827, pl. 433. *Centurus superciliaris* BONAP., Consp. i. 1850, 118.

[3] *Centurus blakei* RIDGW., Auk, iii. July, 1886, 337.

[4] *Centurus nyeanus* RIDGW., Auk, iii. July, 1886, 336.

[5] *Picus hypopolius* WAGL., Isis, 1829, 514. *Centurus hypopolius* LICHT., Nomencl. 1854, 76.

e^1. Larger (wing 4.85 to more than 5.00); frontlet (nasal tufts) red.

f^1. Middle tail-feathers varied with white; red of crown in male confluent with that of nasal tufts; belly paler red, or pinkish red. *Adult male:* Whole top of head and hind-neck bright red. *Adult female:* Similar to male, but crown ash-gray. *Young:* With colors much duller than in adult, and all the markings less sharply defined; the red of the head indistinct, that of the belly often replaced by dull buffy. Length (fresh) 9.00–10.10, wing 4.85–5.50, tail 3.50–3.95, culmen 1.00–1.20. *Eggs* .99 × .73. *Hab.* Eastern United States, west to eastern base of Rocky Mountains, south to Florida and central Texas; rare or accidental east of Hudson River.

409. **M. carolinus** (LINN.). **Red-bellied Woodpecker.**

f^2. Middle tail-feathers entirely uniform black; white bars of back, etc., very much narrower than black ones; red of crown in adult male separated from that of nasal tufts by a white band; middle of belly intense red.

g^1. Rump and upper tail-coverts immaculate white; lower parts paler. *Hab.* Yucatan.

M. dubius (CABOT). **Uxmal Woodpecker.**[1]

g^2. Rump and upper tail-coverts more or less barred or otherwise marked with black; lower parts darker. *Hab.* Cozumel Island, Yucatan.

M. leei RIDGW. **Lee's Woodpecker.**[2]

e^2. Smaller (wing less than 4.50); frontlet (nasal tufts) yellow. (Otherwise similar in color to *M. dubius*, but middle tail-feathers more or less varied with white toward base.)

f^1. Larger and lighter colored, with less white on middle tail-feathers; wing 4.20–4.40. *Hab.* Yucatan.

M. rubriventris (SWAINS.). **Swainson's Woodpecker.**[3]

f^2. Smaller and darker, with more white on middle tail-feathers; wing 3.80–3.95. *Hab.* Cozumel Island, Yucatan.

M. pygmæus RIDGW. **Pygmy Woodpecker.**[4]

d^2. Middle of belly yellow or (rarely) orange.

e^1. Hind-neck yellow, orange, or orange-red.

f^1. Bars on back, etc., narrow, the white ones decidedly narrower than the black ones; breast, etc., deep smoky gray, or olive-gray; *adult male* with red crown-patch usually confluent with orange or orange-red of nape; middle tail-feathers usually varied with white. *Hab.* Salvador, Honduras, Guatemala, and southern Mexico, north to Jalapa and Mirador.

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[1] *Picus dubius* CABOT, Jour. Boston Soc. v. 1845, 91.

[2] *Centurus leei* RIDGW., Descr. N. Sp. B. Cozumel, Feb. 26, 1885, 2.

[3] *Centurus rubriventris* SWAINS., Anim. in Menag. 1838, 354.

[4] *Centurus rubriventris pygmæus* RIDGW., Proc. U. S. Nat. Mus. viii. Oct. 17, 1885, 576.

M. santa-cruzi (Bonap.). **Santa Cruz's Woodpecker.**[1]

*f*². Bars on back, etc., broader, the white ones equal to black ones in width; breast, etc., pale brownish gray or dull grayish white; *adult male* with red crown-patch usually entirely surrounded by ash-gray—rarely confluent with the orange, orange-red, or yellow of nape; middle tail-feather always (?) entirely black.

Adult male: Crown with a bright red patch, usually surrounded by pale grayish (paler, sometimes nearly white, across forehead), but sometimes confluent posteriorly, along the median line, with the orange of the hind-neck; frontlet bright yellow. *Adult female:* Similar to the male, but crown entirely light grayish (paler anteriorly), the yellow of frontlet and belly and orange or yellow of hind-neck paler. *Young:* Much duller in colors than adult, the markings much less sharply defined, and the bright colors of head but faintly indicated; breast indistinctly streaked with dusky. Wing 5.20–5.65, tail 3.40–3.75, culmen 1.20–1.40. *Eggs* 1.02 × .77. *Hab.* Northeastern Mexico and southern Texas........ 410. **M. aurifrons** (Wagl.). **Golden-fronted Woodpecker.**

*e*². Hind-neck soft light grayish brown, or smoky drab.

Rump and upper tail-coverts regularly barred with black. *Adult male:* Head, neck, and most of lower parts uniform soft smoky drab or light grayish brown, the middle of the crown with a crimson patch. *Adult female:* Similar to the male, but no red on crown. *Young:* Not essentially different from adult, but markings less sharply defined, and colors duller. Wing 5.00–5.30, tail 3.50–3.90, culmen .95–1.25. *Eggs* .96 × .71. *Hab.* Southern Arizona, southeastern California, Lower California, and western Mexico, south to Mazatlan.

411. **M. uropygialis** (Baird). **Gila Woodpecker.**

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[1] *Centurus santa-cruzi* Bonap., P. Z. S. 1837, 116.

GENUS **COLAPTES** SWAINSON. (Page 280, pl. LXXXVI., fig. 2.)

Species.

COMMON CHARACTERS.—Back, scapulars, and wing-coverts brownish, barred with black; rump and upper tail-coverts white, the latter broadly barred or otherwise marked with black; outer surface of quills and upper surface of tail-feathers black, the shafts of these feathers bright yellow or red; under surface of quills and tail-feathers paler yellow or reddish, the latter with a broad black terminal band; lower parts pale vinaceous, marked with small roundish or cordate spots of black, the chest with a large transverse, somewhat crescentic, patch of black. *Adult males* with a broad malar stripe, or "mustache," of black or red.

a^1. Shafts, etc., yellow.

b^1. Occiput with a red patch; throat light pinkish cinnamon, or vinaceous; top of head grayish; *male* with the "mustache" deep black.

c^1. Rump immaculate white; length 12.00–12.75, wing 5.50–6.60 (6.15), tail 4.00–4.95 (4.45), exposed culmen 1.25–1.40 (1.33). *Eggs* 1.10 × .85. *Hab.* Eastern North America, north to Hudson's Bay and Alaska (Yukon Valley, to Sitka), west to Great Plains.

412. **C. auratus** (LINN.). **Flicker.**

c^2. Rump thickly spotted with black; wing 5.35–5.75, tail 4.30–4.80. *Hab.* Cuba.

C. chrysocaulosus GUNDL. **Cuban Flicker.**[1]

b^2. Occiput without any red; throat ash-gray; top of head cinnamon-brown; "mustache" of male bright red; length 11.20–11.70. wing 5.35–6.15 (5.75), tail 3.75–4.30 (4.05), exposed culmen 1.30–1.55 (1.38). *Eggs* 1.14 × .85. *Hab.* Southeastern California, Lower California, southern Arizona, and Sonora........... 414. **C. chrysoides** (MALH.). **Gilded Flicker.**

a^2. Shafts, etc., red.

b^1. Top of head dull brown, grayish brown, or brownish gray, becoming perceptibly grayer (or less distinctly brown) on hind-neck, more rusty or cinnamon-colored on forehead, lores, and superciliary region; rump usually immaculate white; back, etc., grayish brown, varying to a burnt-umber tint, narrowly barred with black, these bars always much narrower than the brown interspaces; "mustache" of male bright scarlet.

c^1. Exposed culmen usually much less than 1.60; wing averaging decidedly more than 6.25; crown grayish brown, or brownish gray, becoming browner anteriorly; rump pure white, or slightly tinged with delicate pinkish; shafts pure orange-vermilion, or scarlet, the inner webs of quills and under surface of tail deep pinkish red, varying to orange-red.

d^1. Lighter colored, with back grayish brown, lower parts pale vinaceous, or vinaceous-white, throat ash-gray, and crown light grayish brown or brownish gray; length 12.75–14.00, wing 6.45–7.15 (6.66), tail 4.40–5.20 (4.86), exposed culmen 1.34–1.53 (1.46). *Eggs* 1.12 × .85. *Hab.* Whole of western United States and table-lands of Mexico, except northwest coast and Lower California; east to Rocky Mountains (occasionally across Great Plains to Kansas).

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[1] *Colaptes chrysocaulosus* GUNDL., Ann. Lyc. N. Y. vi. 1858, 273.

413. **C. cafer** (Gmel.). **Red-shafted Flicker.**[1]

*d*². Darker, with back deeper brown (sometimes of a warm burnt-umber tint), lower parts deeper vinaceous, throat deeper ash-gray (sometimes almost plumbeous), and top of head deeper brownish; wing 6.35–7.00 (6.63), tail 4.70–5.20 (5.01), exposed culmen 1.35–1.60 (1.47). *Hab.* Northwest coast, north to Sitka, south to northern California (chiefly in coast district).

413*a*. **C. cafer saturatior** Ridgw. **Northwestern Flicker.**

*c*². Exposed culmen not less than 1.60, the bill slenderer and more curved; wing averaging less than 6.25; crown cinnamon-brown, becoming deep cinnamon anteriorly; rump vinaceous-white; shafts red-lead color, the under surface of quills and tail a paler shade of the same.

Wing 5.90–6.25 (6.05), tail 4.50–5.00 (4.72), exposed culmen 1.60–1.85 (1.70). *Hab.* Guadalupe Island, Lower California.

415. **C. rufipileus** Ridgw. **Guadalupe Flicker.**

*b*². Entire top of head and hind-neck uniform deep cinnamon, strongly and very abruptly contrasted with ash-gray of ear-coverts, etc.; rump distinctly spotted with black; back, etc., light cinnamon-brown, broadly barred with black, these bars about the same width as the lighter interspaces; "mustache" of male carmine-red; size about the same as in *C. cafer*. *Hab.* Guatemala.

C. mexicanoides Lafr. **Guatemalan Flicker.**[2]

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[1] It may hereafter prove expedient to separate the birds of the United States from those of Mexico as representing a geographical race. Eight specimens from Mexico (Valley of Mexico, Mirador, Saltillo, Puebla, etc.) are much smaller than northern examples, and with a single exception (an example from Saltillo, Coahuila) have the black bars on the back, etc., much narrower. The extreme and average measurements of this series are as follows: wing 5.90–6.50 (6.13), tail 4.00–4.70 (4.41), exposed culmen 1.20–1.40 (1.30). If separated, the United States bird would have to be called *C. cafer collaris* (Vig.), the *Colaptes collaris* of Vigors (Zool. Jour. iv. 1829, 384; Zool. Beechey's Voy. 1839, 24, pl. 9) having been based on specimens from Monterey, California.

[2] *Colaptes mexicanoides* Lafr., Rev. Zool. 1844, 42.

ORDER MACROCHIRES.—THE GOATSUCKERS, SWIFTS, ETC. (Page 2.)

Families.

*a*¹. Secondaries more than six; bill short, very broad at base, the gape deeply cleft; plumage not metallic.
  *b*¹. Middle toe much longer than lateral toes, its claw with inner edge pectinated; gape more or less distinctly bristled; plumage much spotted, the feathers soft, with downy or moth-like surface. (Suborder *Caprimulgi.*).. **Caprimulgidæ.** (Page 297.)
  *b*². Middle toe not distinctly longer than lateral toes, its claw with edge not pectinated; gape without bristles; plumage plain and compact, the feathers with smooth surface. (Suborder *Cypseli.*) **Micropodidæ.** (Page 302.)
*a*². Secondaries only six; bill long as head, or longer, slender, the gape not deeply cleft; plumage more or less metallic. (Suborder *Trochili.*) **Trochilidæ.** (Page 303.)

FAMILY CAPRIMULGIDÆ.—THE GOATSUCKERS. (Page 297.)

(*Eggs* deposited on bare ground, dead leaves, gravel, or sand, 2, broadly elliptical-oval, plain or spotted.)

Genera.

*a*¹. Gape without conspicuous bristles; tail emarginated. **Chordeiles.** (Page 300.)
*a*². Gape with conspicuous bristles; tail even or rounded.
  *b*¹. Tarsus shorter than middle toe, and feathered in front almost to the toes; first quill longer than fourth .... **Antrostomus.** (Page 298.)
  *b*². Tarsus longer than middle toe, entirely naked in front; first quill shorter than fourth.
    *c*¹. Tail even, much shorter than wing, the latter less than 6.00; quills without white patch..................... **Phalænoptilus.** (Page 299.)
    *c*². Tail much rounded, nearly equal to or longer than wing, the latter 6.00 or more; quills with a white patch... **Nyctidromus.** (Page 300.)

GENUS **ANTROSTOMUS** GOULD. (Page 297, pl. LXXXVII., fig. 1; pl. LXXXVIII., fig. 1.)

Species.

COMMON CHARACTERS.—Upper parts brownish and grayish, much mottled and otherwise varied with blackish; outer webs of quills spotted with ochraceous, but (in North American species) without any white spot; lower parts pale fulvous or buffy, mottled or barred with dusky; throat with a white, ochraceous, or buffy transverse patch; tail of male with white on terminal portion of inner webs.

*a*¹. Bristles of gape with lateral filaments.

Adult male: Terminal third, or more, of three outer tail-feathers white, or buffy. *Adult female:* Outer tail-feathers without any white or buffy patch; length about 11.00–12.00, wing 8.70–8.90, tail 6.25–630. *Eggs* deposited on ground or dead leaves in woods, 1.41 × 1.01, pale pinkish buff, marbled with pale brown and lilac-gray. *Hab.* Southern Atlantic and Gulf States and lower Mississippi Valley, north to Virginia and southern Illinois..... 416. **A. carolinensis** (GMEL.). **Chuck-will's-widow.**

*a*². Bristles of gape without lateral filaments.

*b*¹. Nostrils large, opening vertically from out a nearly circular tubular case; rictal bristles very large and much lengthened, extending nearly half their length beyond tip of bill; top of head with ground-color distinctly brownish, the whole surface marked with broad, serrate-edged streaks of black; adult males with white tail-patches occupying less than terminal third of three or four outer feathers, and decreasing in extent from exterior feather.

*c*¹. Wing 7.00, or more; four outer tail-feathers tipped with white in male, three outer ones tipped with buff in female; length about 10.50–11.00, wing 7.00–7.25, tail 5.50–5.70, longer rictal bristles 1.80–2.00. *Hab.* Cuba.

A. cubanensis LAWR. **Cuban Whippoorwill.**[1]

*c*². Wing less than 7.00; three outer tail-feathers tipped with white in male, with buff in female; length about 10.00, wing 6.60–6.70, tail 5.20–5.35, longer rictal bristles about 1.20–1.40. *Hab.* Eastern Mexico (Mirador, La Parada, etc.).

A. salvini (HARTERT). **Mexican Whippoorwill.**[2]

*b*². Nostrils small, inconspicuous, not distinctly raised above general level of base of bill; rictal bristles much weaker, reaching less than half their length beyond tip of bill; top of head more or less distinctly grayish, narrowly streaked laterally, and very broadly streaked medially, with black; adult male with white tail-patch occupying more than terminal third of three outer tail-feathers, and increasing in extent from exterior feather.

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[1] *Antrostomus cubanensis* LAWR., Ann. Lyc. N. Y. vii. May, 1860, 260.

[2] *Caprimulgus salvini* HARTERT, Cat. B. Brit. Mus. xvi. 1892, 563.

c^1. Smaller, with white tail-patch of male more extended, throat-bar chiefly or wholly white in adult male, the lores and auriculars less tawny. *Young:* Scapulars, wing-coverts, sides of neck, etc., bright ochraceous-buff, the first marked with large roundish spots of black; top of head finely mottled grayish, spotted, instead of marked longitudinally, with black, the spots larger in centre of crown; lower parts almost plain light buffy; otherwise, essentially like adult. Length about 9.50–10.00, wing 5.80–6.70, tail 5.10–6.50, longer rictal bristles about 1.40–1.70 (but much slenderer than in *A. macromystax*). *Eggs* deposited on ground or dead leaves in woods, 1.15 × .84, creamy white or pure white, spotted or blotched with lilac-gray, or lilac-gray and pale brown. *Hab.* Eastern United States, north to British Provinces (Nova Scotia, New Brunswick, Manitoba, etc.), west to edge of Great Plains; south, in winter, through eastern Mexico to Guatemala.

417. **A. vociferus** (Wils.). **Whippoorwill.**

c^2. Larger, with white tail-patch of adult male less extended, throat-bar largely or entirely ochraceous in adult male, the lores and auriculars (whole plumage, in fact) more tawny; length 9.60–10.20, wing 6.27–6.65, tail 5.03–5.45, longer rictal bristles about 1.40–1.80. *Hab.* Table-lands of central Mexico, north to southern Arizona.

417*a*. **A. vociferus macromystax** (Wagl.).
Stephens's Whippoorwill.

Genus **PHALÆNOPTILUS** Ridgway. (Page 297, pl. LXXXIX., fig. 1.)

Species.

Adult male: Top of head soft velvety grayish, barred with dusky; under tail-coverts plain buff; upper parts in general soft brownish gray, with a very velvety, moth-like surface, relieved by irregular spottings and zigzags of black, the outer webs of the quills spotted with deep buff, or ochraceous; throat with a large transverse patch of white; other lower parts (except tail-coverts) barred with blackish and light buffy; tail-feathers (except middle pair) broadly tipped with white. *Adult female:* Similar to the male, but usually with white tips to tail-feathers narrower. *Young:* Much like adult, but colors above more silvery gray, mixed more or less with bright rusty or ochraceous, the black markings smaller and less distinct, the white of throat and tail reduced in extent, and tinged with ochraceous or rusty. Length 7.25–8.50, wing 5.60–5.75, tail 3.70–3.90. *Eggs* deposited on ground in open places, .99 × .75, plain dead white, usually with a faint buffy or pinkish tinge. *Hab.* Western United States, east to across Great Plains, south to southern Mexico.. 418. **P. nuttalli** (Aud.). **Poorwill.**

GENUS **NYCTIDROMUS** GOULD. (Page 297, pl. LXXXVIII., fig. 2.)

Species.

Adult male: Above finely mottled brownish gray or brownish, the crown with a central series of broad black streaks, the scapulars handsomely variegated with black and buff in large, somewhat V-shaped, markings; base of six outer primaries white, forming a large patch over both webs, the rest of the quills plain dusky; outer tail-feathers nearly uniform blackish; next mostly white, with outer web chiefly dusky; third also mostly white, the outer web edged with dusky; four middle tail-feathers without any white, their ground-color mottled brownish gray, relieved by irregular "herring-bone" blotches of dusky along the shaft; lower parts buffy, regularly barred with dusky, the throat crossed by a distinct collar of pure white; length 12.00–13.50, wing 6.75–7.50, tail 6.75–7.40. *Adult female:* Similar to the male, but smaller, more brownish, the colors duller and less handsomely contrasted, the white of quills and tail-feathers more restricted, that of former occupying only four outer quills, of latter occupying only terminal portion (for .75–1.75) of the inner webs of second and third feathers, the blackish basal portion of which is broadly, though more or less irregularly, barred and mottled with ochraceous; length about 10.50–11.50, wing 6.00–6.30, tail 5.80–6.00. *Young:* Much paler than adult, the lower parts nearly immaculate pale dull buffy, the wing-coverts and tertials with this color prevailing; dark markings on top of head in form of somewhat triangular, drop-shaped, or diamond-shaped spots, each immediately surrounded by a paler tint than the general surface; sexes distinguished as in adult stages. *Eggs* deposited on ground or dead leaves in woods or thickets, 1.23 × .89, deep pinkish buff, or salmon-buff, sparsely speckled or spotted with rusty or cinnamon. *Hab* Southern Mexico and north to lower Rio Grande Valley in Texas.. 419. **N. albicollis merrilli** SENN. **Parauque.**

GENUS **CHORDEILES** SWAINSON. (Page 297, pl. LXXXVII., fig. 2.)

Species.

COMMON CHARACTERS.—Above mottled with blackish and grayish (sometimes varied, more or less, with ochraceous), the tail more or less distinctly banded with dusky; quills chiefly plain dusky, several of the longer ones marked near the middle portion with a more or less extensive white or buffy spot; lower parts whitish or buffy, barred with dusky, the throat with a more or less conspicuous Λ-shaped white or buffy patch; *adult males* with a broad bar of white across tail near tip (except on middle feathers). *Young:* Much more finely and profusely mottled than in adults, with less of dusky above and dusky bars on lower parts less distinct; upper parts often more or less suffused or mixed (especially in *C. texensis* and *C. virginianus henryi*) with pale cinnamon or rusty buff.

*a*¹. White or (rarely) buffy spot or patch on quills situated mainly or wholly anterior to tip of seventh quill, the space between this white patch and the primary coverts unspotted dusky; secondaries not distinctly, if at all, spotted with buffy or ochraceous; general color above very variable, but with dusky markings rarely distinctly longitudinal, or streak-like; first quill usually longest.

b^1. Darker, with dusky markings predominating above.

c^1. Larger: Wing 7.30–8.25 (7.79), tail 4.30–4.75 (4.52). *Eggs* deposited in open situations (fields, etc.), 1.18 × .86, pale olive-buff, buffy white, grayish white, etc., thickly speckled and dashed, in varying character and quantity, with deep brown, olive, or even blackish, usually mixed with clouding or marbling of pale purplish gray. *Hab.* Eastern North America, north to Hudson's Bay, west to edge of Great Plains (to Pacific coast along northern border of United States); south, in winter, to Bahamas, Cuba, Jamaica (breeds ?), Middle America, and portions of eastern South America.

420. **C. virginianus** (Gmel.). **Nighthawk.**

c^2. Smaller: Wing 6.60–7.25, tail 3.85–4.30.[1] *Eggs* 1.13 × .80, the markings averaging bolder and darker than in *C. virginianus*. *Hab.* Southern Florida, Cuba, and Jamaica.

(45.) 420*b*. **C. virginianus minor** (Cab.). **Cuban Nighthawk.**

b^2. Paler, with light grayish, buffy, or ochraceous markings predominating on upper parts; length 9.15–10.00, wing 7.65–8.50 (7.89), tail 4.25–4.95 (4.59). *Eggs* 1.18 × .85, averaging paler than those of true *C. virginianus*. *Hab.* Western United States, east, occasionally, to western and northern Illinois, south to table-lands of Mexico.

420*a*. **C. virginianus henryi** (Cass.). **Western Nighthawk.**

a^2. White (or buffy) spot or patch on quills situated usually mainly or wholly posterior to tip of seventh quill, the space between this patch and the primary coverts usually distinctly spotted with buff or ochraceous; secondaries conspicuously spotted with ochraceous; general color above dull grayish, mottled and streaked with dusky; first quill usually shorter than second; length about 8.00–9.00, wing 6.60–7.30 (7.11), tail 4.10–4.75 (4.37). *Eggs* 1.06 × .77, dull white, grayish white, etc., finely speckled with olive or vandyke-brown (averaging much paler in coloration than eggs of *C. virginianus henryi*). *Hab.* Southwestern border of United States (Texas to southern Utah and California), and south to Costa Rica.

421. **C. acutipennis texensis** (Lawr.). **Texan Nighthawk.**

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[1] Florida specimens are not quite typical, being larger than those from Cuba or Jamaica, and, as a rule, with less ochraceous in their plumage. Four Florida specimens (Miami, Marco, and Clearwater), compared with four from Jamaica and two from Cuba, measure as follows:

Florida specimens: Wing 7.00–7.25 (7.15), tail 4.10–4.30 (4.13).

Cuban specimens: Wing 6.75–7.00 (6.88), tail 4.00–4.30 (4.15).

Jamaican specimens: Wing 6.60–7.00 (6.80), tail 3.85–4.00 (3.95).

FAMILY **MICROPODIDÆ**.—THE SWIFTS. (Page 297.)

Genera.

a^1. Tarsi and part of toes feathered, the hind-toe directed either forward or laterally, not backward. (Subfamily *Micropodinæ*.)......... **Aëronautes.** (Page 303.)

a^2. Tarsi and toes naked, the hind-toe directed backward. (Subfamily *Chæturinæ*.)

  b^1. Tail rounded, or even, the feathers usually with distinct spinous points; wing less than 5.50 .... **Chætura.** (Page 302.)

  b^2. Tail slightly forked, or emarginate.

    c^1. Tail-feathers without spinous points; wing less than 7.00; no white collar.. **Cypseloides.** (Page 302.)

    c^2. Tail-feathers with distinct, though small, spinous points; wing 8.00 or more; a white collar .... *Hemiprocne.*[1]

GENUS **CYPSELOIDES** STREUBEL. (Page 302, pl. LXXXIX., fig. 2.)

Species.

Adult: Uniform dusky or blackish, becoming more sooty grayish on head and neck, the forehead more hoary. *Young:* Similar, but feathers bordered terminally with whitish. Length about 7.00–7.50, wing 6.50–7.50, tail 2.30–3.00. *Hab.* Western United States (north to Colorado, Nevada, and British Columbia), and south to Costa Rica; Jamaica, Haiti, and other West India islands.

422. **C. niger** (GMEL.). **Black Swift.**

GENUS **CHÆTURA** STEPHENS. (Page 302, pl. LXXXIX., fig. 3.)

Species.

COMMON CHARACTERS.—Plain dusky, or dark sooty grayish, above, the wings darker, the rump, upper tail-coverts, and tail usually paler; lower parts plain sooty grayish, darker posteriorly, paler (sometimes dull whitish or whitish gray) anteriorly. Or else, uniform sooty, the throat not paler (*C. brunneitorques*, ♀), or blackish, with broad collar of rufous round neck (*C. brunneitorques*, ♂).

a^1. Throat distinctly paler than other parts; male without rufous collar.

  b^1. Wing 5.00, or more.

    Length about 4.75–5.50, wing 5.00–5.25, tail (including spines) 1.90–2.15. *Nest* a shallow half-saucer-shaped structure of dried twigs, glued together with the bird's saliva, and with the same adhesive substance fastened to the inside of a hollow tree (with the entrance from above), a disused chimney, or similar place. *Eggs* 4–6, .79 × .52, elliptical-ovate, plain pure white. *Hab.* Eastern North America, north to Labrador and to 50° in the interior, west to edge of Great Plains........................ 423. **C. pelagica** (LINN.). **Chimney Swift.**

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[1] *Hemiprocne* NITZSCH, Pterylog. 1840, 123. Type, by elimination, *Hirundo zonaris* SHAW.

This genus includes two Mexican species—the largest members of the family—either of which may possibly occur as a straggler within our southwestern border.

*b*². Wing decidedly less than 5.00.

*c*¹. Rump, upper tail-coverts, and tail light sooty grayish, very much lighter than the olive-dusky back; breast and belly light sooty grayish; length about 4.15–4.50, wing 4.30–4.75, tail (including spines) 1.50–1.90. *Nest* like that of *C. pelagica*, but only (?) in hollow trees. *Eggs* .71 × .49. *Hab.* Western United States (chiefly Pacific coast), north to British Columbia; south, in winter, to Guatemala..................... 424. **C. vauxii** (TOWNS.). **Vaux's Swift.**

*c*². Upper parts entirely blackish (very slightly paler on rump, etc.), glossed with olive-greenish on back and with bluish on wings; breast and belly deep sooty grayish brown; wing 4.20–4.60, tail (including spines) 1.70–1.75.[1] *Hab.* Southern Mexico (Yucatan, including Cozumel, Tehuantepec, etc.), Guatemala, and south to Costa Rica.
C. gaumeri LAWR. **Gaumer's Chimney Swift.**[2]

*a*². Throat not paler than rest of under parts; male with a broad collar of rufous round neck; length about 4.75–5.00, wing 4.80–5.20, tail 1.80–2.10. *Hab.* Central America, north to eastern Mexico (Orizaba), south to Ecuador.
C. brunneitorques LAFR. **Lafresnaye's Chimney Swift.**[3]

GENUS **AËRONAUTES** HARTERT.[4] (Page 302, pl. LXXXIX., fig. 4.)

Species.

Above dull blackish, usually becoming lighter and grayer on forehead; sides and under tail-coverts also dull blackish; other lower parts, tips of secondaries (outer webs only), and a patch on each side of rump, white; length 6.50–7.00, wing 5.30–5.90, tail 2.50–2.70. *Hab.* Western United States (in mountains), and south to Guatemala.................... 425. **A. melanoleucus** (BAIRD). **White-throated Swift.**

FAMILY **TROCHILIDÆ.**—THE HUMMINGBIRDS. (Page 297.)

(*Nest* a beautifully felted cup-shaped structure, composed of plant-down, spiders' webs, lichens, etc.—the last exteriorly, the first internally. *Eggs* 2, elliptical-ovate or elliptical-oval, large in proportion to size of the bird, plain pure white.)

Genera.[5]

*a*¹. Anterior toes united for basal half; bill much compressed (except at base), about two-thirds as long as wing, decidedly arched; tail graduated, the middle pair of feathers much longer than the others, all tipped with white.

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[1] These spines usually worn entirely off in Yucatan specimens.

[2] *Chætura gaumeri* LAWR., Ann. N. Y. Ac. Sci. ii. No. 8, March, 1882, 245.

[3] *Chætura brunneitorques* LAFR., Rev. Zool. 1844, 81.

[4] *Aëronautes* HARTERT, Cat. B. Brit. Mus. xvi. 1892, 459. Type, *Cypselus melanoleucus* BAIRD.

[5] Characters of all the Mexican genera are given, for the reason that almost any species of Hummingbird found on the table-lands or mountains of Mexico may reasonably be expected to occur within our borders. In

Plumage very dull, almost devoid of metallic colors............. *Phæthornis.*[1]

a^2. Anterior toes all cleft to the base; bill never much compressed (usually broader than deep), less than two-thirds as long as wing (except in *Calothorax* and some species of *Doricha*), usually nearly straight (distinctly curved only in *Campylopterus*, *Lampornis*, *Calothorax*, and some species of *Doricha*); tail variable in form, but, if graduăted, the middle pair of feathers neither elongated nor white-tipped.

b^1. Inner webs of two outer tail-feathers white, except at end.

Secondaries rufous, tipped with darker; wing about 2.10–2.40. *Eupherusa.*[2]

b^2. Inner web of two outer tail-feathers without white, except sometimes at tip.

c^1. Exposed culmen not more than .45; tail even, two-thirds as long as wing, the latter 1.75–2.00.. *Abeillia.*[3]

c^2. Exposed culmen decidedly more than .45.

d^1. Tail nearly as long as wing, wedge-shaped, with feathers broad and rounded at tips; shafts of three outer quills much (sometimes enormously) thickened; wing about 2.60.......... *Sphenoproctus.*[4]

d^2. Tail much shorter than wing; if wedge-shaped, the feathers narrow and pointed at tips.

e^1. Exposed culmen less than one-fourth as long as wing.

Quills and secondaries rufous, with darker tips or terminal margins; tail plain dark purplish, tipped with dull light grayish in female; male with throat purplish red, the remaining under parts rich purplish blue; wing about 2.65–3.20.............................. *Lamprolaima.*[5]

e^2. Exposed culmen more than one-fourth as long as wing.

f^1. Exposed culmen one-half as long as wing, or longer.

g^1. Wing 2.20, or more; tail rounded, the feathers

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fact, at least two of them (*Lamprolaima rhami ?* and *Campylopterus hemileucurus ?*) have probably already been seen by ornithologists. (See last foot-notes on pages 304 and 305.)

[1] *Phæthornis* SWAINS., Zool. Jour. 1827, 357. Type, *Trochilus superciliosus* LINN. (Two species in southern Mexico, and numerous species farther south.)

[2] *Eupherusa* GOULD, Mon. Troch. pt. xiv. 1857. Type *Ornismya eximia* DELATTR. (One species in southern Mexico, another in Guatemala, a third in Costa Rica and Veragua.)

[3] *Abeillia* BONAP., Consp. i. 1850, 79. Type, *Ornismya abeillei* DELATTR. (One species in southern Mexico and Central America.)

[4] *Sphenoproctus* CAB. & HEIN., Mus. Hein. iii. 1860, 11. Type, *Ornismya pampa* LESS. (One species in southern Mexico, another in Guatemala.)

[5] *Lamprolaima* REICH., Aufz. der Colib. 1853, 9. Type *Ornismya rhami* LESS. (One species in highlands of Mexico and Guatemala. This is possibly the species referred to in "Birds of the North-West," p. 273, but erroneously identified by Dr. Coues as *Eugenes fulgens*, as follows:—"Mrs. Maxwell, of Boulder [Colorado], . . . informs me that she has seen on two or three occasions a Hummingbird with a flaming-red throat and breast, much larger than the present species [*Selasphorus platycercus*], a straggler from Mexico, perhaps, as yet undetected within the limits of the United States.")

broad; bill long, stout, and straight, nearly as long as tail; outer tail-feathers tipped with white in both sexes.................................... *Floricola.*[1]

*g*². Wing less than 2.00 (1.30–1.70); tail forked in males, double-rounded in females; bill slender, distinctly curved (except in two or three species of *Doricha*); outer tail-feathers tipped with white only in females; wing about 1.30–1.70.

*h*¹. Tail shorter than wing or exposed culmen, the feathers pointed in adult males.

Calothorax. (Page 316.)[2]

*h*². Tail longer than wing, or else longer than exposed culmen, the feathers not pointed in either sex.................................. *Doricha.*[3]

*f*². Exposed culmen less than half as long as wing.

*g*¹. Tail 2.25, or more, rounded, feathers very broad, the three outermost broadly tipped with white in both sexes; shafts of three outer quills very strong, often enormously thickened; wing 2.90–3.20; adult male (of the Mexican species) with head, neck, and lower parts rich metallic violet or violet-blue, the female gray beneath, with blue throat....................................... *Campylopterus.*[4]

*g*². Tail less than 2.25.

*h*¹. Tail more than three-fourths as long as wing, forked for more than one-fourth its length, the feathers broad and rounded at tips; adult males wholly bright green beneath, the tail blue-black, or bronze-black.

*i*¹. Middle tail-feathers blue-black, like the rest (tipped with dull grayish in Mexican species); *females* and *young males* with outer tail-feathers grayish white, or pale grayish, at tip and base, blue-black in middle portion................ *Chlorostilbon.*[1]

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[1] *Floricola* Elliot, Class. & Synop. Troch. Sept. 1878, 82. Type, *Trochilus longirostris* Vieill. (Two species inhabiting pine forests of Mexican highlands, another in Guatemala, two or three others in mountains of northern South America.)

[2] As a subgenus of *Trochilus*, in accordance with the A. O. U. Check List, but in reality a very distinct genus.

[3] *Doricha* Reich., Aufz. der Colib. 1853, 12. Type, *Trochilus enicurus* Vieill. (One Mexican, one Guatemalan, and two Bahaman species.)

[4] *Campylopterus* Swains., Zool. Jour. 1826, 328. Type, *Trochilus largipennis* Bodd. (One Mexican species, —a splendid bird,—one peculiar to Guatemala, and several in northern South America. The first, *C. hemileucurus* (Licht.), is the largest hummingbird found north of the Isthmus of Panama, being nearly six inches in length. It is very possibly the species to which Dr. R. W. Shufeldt, U.S.A., refers in a letter dated June 9, 1886, as having been seen by him the day before, near Fort Wingate, New Mexico, and which he described as being "fully large enough for *Eugenes fulgens*, and whirred like an old quail."

i^2. Middle tail-feathers bronzy; *females* and *young males* without grayish base or tip to outer tail-feathers...................... *Sporadinus.*[2]

h^2. Tail less than three-fourths as long as wing, variously shaped, but never forked for more than one-fourth its length; *adult males* variously colored, but never entirely green, beneath.

i^1. Lower parts pure white, the sides sometimes green, or spotted with green; sexes alike.

j^1. Exposed culmen decidedly more than half as long as tail; top of head usually metallic blue or violet. *Uranomitra.*[3]

j^2. Exposed culmen not more than half as long as tail; top of head never blue or violet...................... *Agyrtria.*[4]

i^2. Lower parts never pure white.

j^1. Tail bright bluish green or greenish blue, crossed near end by a broad band of blue-black.

Breast and sides of head deep blue; throat brilliant green, the centre of each feather darker; sexes alike; wing 2.60–2.80. *Petasophora.*[5]

j^2. Tail not bluish green, etc.

k^1. Feathering of forehead extended forward as far as anterior end of nostrils, and partly or entirely covering the scale over nostrils.

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[1] *Chlorostilbon* Gould, Mon. Troch. pt. v. 1853. Type, *Trochilus pucherani* Bourc. & Muls. (Three species in Mexico, one in Porto Rico, and about six in South America.)

[2] *Sporadinus* Bonap., Rev. et Mag. Zool. 1854, 255. Type, *Trochilus riccordi* Gerv. (One species in Haiti, one in Cuba and Bahamas, and apparently one peculiar to Bahamas.)

[3] *Uranomitra* Reich., Aufz. der Colib. 1853, 10. Type, *Trochilus franciæ* Bourc. & Muls. (Four species in Mexico, one in Honduras, one in Colombia, and one in Peru.)

[4] *Agyrtria* Reich., Troch. Enum. 1855, 7. Type, *Trochilus brevirostris* Less. (Two Mexican and numerous South American species; some of the latter with lower parts mostly green; one of the former with buffy or rufous belly and flanks.)

[5] *Petasophora* Gray, List Gen. B. 1840, 13. Type, *Trochilus serrirostris* Vieill. (One species in Mexico and Guatemala, several in Central and South America.)

l^1. Wing more than 2.40.

m^1. Tail partly rich chestnut, glossed with bright purple; bill rather distinctly curved. *Lampornis.*[1]

m^2. Tail without chestnut or bright purple.

n^1. Tail wholly (*male*) or partly (*female*) greenish bronze.

Adult male with throat brilliant emerald-green, breast blackish, and crown rich violet or violet-blue. **Eugenes.** (Page 309.)

n^2. Tail wholly or chiefly blackish.

Outer tail-feathers sometimes broadly tipped with white, or grayish; lower parts deep dull grayish, tinged with green on sides, or dull white medially and green laterally; a conspicuous white streak behind eye; *adult males* with throat blue, reddish purple, or light emerald-green, not very brilliant; wing about 2.50–3.20.

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[1] *Lampornis* SWAINS., Zool. Jour. iii. 1827, 358. Type, *Trochilus mango* LINN. (One Mexican, several West Indian, and several South American species.)

Cœligena. (Page 310.)

l^2. Wing less than 2.25.

Adult males with a brilliant gorget of metallic red or purple... **Trochilus.** (Page 310.)

k^2. Feathering of forehead scarcely extended beyond posterior end of nostrils, the scale over latter therefore for the greater part, or entirely, naked, and the bill very broad at base; wing about 1.90–2.15.

l^1. Tail blue-black in male, deeply emarginated, and with middle feathers tipped with dull grayish; in female shallowly emarginated, green basally, blue-black terminally, the outer feathers tipped with grayish white; *adult males* metallic green beneath, the throat bluish.

Iache. (Page 319.)

l^2. Tail not blue-black.

m^1. Exposed culmen more than half as long as tail.

n^1. Tail rufous, or chestnut, the feathers usually with dusky or bronzy terminal margins.

Amazilia. (Page 316.)

n^2. Tail dull greenish, with dusky subterminal band (except on middle feathers), the outer feathers broadly tipped with dull light grayish brown; plumage in general very dull, the lower parts dull brownish gray. *Phæoptila.*[1]

*m*². Exposed culmen not more than half as long as tail.

Adult males with cheeks black, bordered above by a white stripe or spot; forehead and chin deep blue, or blue-black; throat brilliant emerald-green.. **Basilinna.** (Page 318.)

GENUS **EUGENES** GOULD. (Page 307, pl. XC., fig. 1.)

Species.

COMMON CHARACTERS.—*Adult males* with top of head rich metallic violet or violet-blue, the chin and throat brilliant emerald-green or light bluish green; upper parts dark bronzy green; lower parts (except throat and lower tail-coverts) plain dusky greenish or dull bronzy; lower tail-coverts paler greenish or bronzy, bordered with paler. *Adult females* with top of head dull brownish gray or grayish brown, rest of upper parts bronzy green; lower parts pale brownish gray, the sides and flanks tinged with green; a small white postocular spot.

*a*¹. *Adult male:* Breast very dark bronzy green, appearing nearly black in some lights; length 4.50–5.00, wing 2.90–3.10, tail 1.90–2.00, culmen 1.00–1.20. *Adult female:* Outer tail-feathers very broadly (for about .35–.45) tipped with pale gray or dull grayish white; wing 2.60–2.75, tail 1.70–1.90, culmen 1.00–1.15. *Young:* Similar to adult female, but feathers of upper parts bordered terminally with pale buffy. *Hab.* Highlands of Mexico and Guatemala, north to southern Arizona.. 426. **E. fulgens** (SWAINS.). **Rivoli Hummingbird.**

*a*². *Adult male:* Breast dull bronzy, or bronzy green, the feathers dull brownish gray immediately beneath surface; lower tail-coverts green margined with pale buffy; wing 3.00–3.15, tail 1.90–2.00, culmen 1.20–1.30. *Adult female:* Outer tail-feathers more narrowly (for about .20–.25) tipped with darker brownish gray; wing 2.90, tail 1.85–1.90, exposed culmen 1.40–1.50. *Hab.* Highlands of Costa Rica. **E. spectabilis (Lawr.). Admirable Hummingbird.**[1]

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[1] *Phæoptila* GOULD, Intr. Mon. Troch oct. ed. 1861, 169. Type, *Cyanomyia* (?) *sordida* GOULD. (The single known species peculiar to Mexico.)

Genus CŒLIGENA Lesson. (Page 308, pl. XC., fig. 3.)

Species.

Common Characters.—Above rather dull metallic greenish, changing to purplish black on upper tail-coverts and tail; ear-coverts dusky, bordered above by a conspicuous white streak; lower parts deep dull grayish, tinged with green on sides, or dull white medially and green laterally; outer tail-feathers sometimes broadly tipped with white; *adult males* with throat blue, reddish purple, or pale emerald-green, not very brilliant.

a^1. Lower parts dull grayish, glossed with green on sides.

b^1. Outer tail-feathers broadly and abruptly tipped with white in both sexes; *adult male* with throat dull metallic azure-blue; length about 4.50–5.00 (of male before skinning, 5.40), wing 2.90–3.20, tail 1.85–2.20, exposed culmen .85–1.00. *Hab.* Highlands of Mexico, north to southern Arizona. 427. **C. clemenciæ Less. Blue-throated Hummingbird.**

b^2. Outer tail-feathers more narrowly and indistinctly tipped with dull brownish gray; *adult male* with throat metallic reddish purple, the feathers narrowly bordered with light brownish gray; length about 4.50, wing 2.60, tail 1.80. *Hab.* Highlands of Guatemala and Mexico, north to Jalapa. **C. henrica (Less. & Delattr.). Henri Delattre's Hummingbird.**[2]

a^2. Lower parts dull white medially, metallic green laterally.

Adult male with throat pale emerald-green, the feathers bordered with white; length about 4.25, wing 2.40–2.70, tail 1.65–1.75, exposed culmen .85–.90. *Hab.* Highlands of Guatemala. **C. viridipallens (Bourc. & Muls.) Pale-green-throated Hummingbird.**[3]

Genus TROCHILUS Linnæus. (Page 308, pl. XC., figs. 4, 7–10; pl. XCI., figs. 1–7.)

(46.)

Species.

Common Characters.—Upper parts metallic greenish, varying from nearly pure green to bronzy; median lower parts whitish. *Adult males* with a portion, or the whole, of the throat brilliant metallic (sometimes top of head similar), the tail-feathers (except middle pair) without white tips[1] or green bases. *Adult females* and *young* with chin and throat dull whitish, or pale grayish (sometimes spotted centrally with the metallic color of the male), the rectrices (except middle pair) greenish basally, black subterminally, and tipped with white.

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[1] *Heliomaster spectabilis* Lawr., Ann. Lyc. N. Y. viii. 1867, 472. *Eugenes spectabilis* Muls., Hist. Nat. Ois. Mouch. ii. 1876, 215.

[2] *Ornismya henrica* Less. & Delattr., Rev. Zool. 1839, 17. *Cœligena henrici* Cab. & Hein., Mus. Hein. iii. 1860, 15.

[3] *Trochilus viridipallens* Bourc. & Muls., Ann. Soc. Lyons, 1846, 321. *Cœligena viridipallens* Muls., Hist. Nat. Ois. Mouch. i. 1877, 185.

a^1. Exposed culmen less than half as long as wing, the bill straight.

b^1. Middle tail-feathers narrower near end than at base.

c^1. Exposed culmen .60, or more; outer tail-feathers without white tips in adult males.

d^1. Outer tail-feather not decidedly shorter than middle pair, and not conspicuously narrower than the next; *adult males* with six innermost quills abruptly much smaller and narrower than the rest, the top of head greenish like back, or dusky, the tail-feathers (except middle pair) pointed. (Subgenus *Trochilus.*)

e^1. *Adult male:* Chin, only, opaque velvety black, the rest of the gorget intense metallic crimson, changing to golden red; tail forked for about .30–.35; length about 3.07–3.25, wing 1.60, tail 1.25, exposed culmen .55–.65. *Adult female:* Tail double-rounded, the outer feathers about as long as middle pair (sometimes a little shorter), the middle pair wholly green, the rest green basally, then black, the three outer pairs broadly tipped with white; length about 3.50–3.85, wing 1.80, tail 1.20, culmen .70. *Young male:* Similar to adult female, but throat streaked with dusky, feathers of upper parts more or less distinctly margined with pale buffy, and tail more forked. *Young female:* Similar to young male, but throat without streaks, and tail more rounded. *Eggs* .51 × .33. *Hab.* Eastern United States, north to lat. 59° N., west to Great Plains, south, in winter, to Bahamas, Cuba, Porto Rico, eastern Mexico, and Central America, to Veragua.

428. **T. colubris** Linn. **Ruby-throated Hummingbird.**

e^2. *Adult male:* Chin and throat opaque velvety black, bordered below by a broad band of metallic violet, changing to green and blue; tail slightly forked, or emarginated (depth of fork only about .10 of an inch); length about 3.30–3.75, wing 1.70–1.75, tail 1.25, culmen .70–.75. *Adult female:* Tail much rounded, the middle feathers about the longest; plumage not essentially different from that of female *T. colubris;* length about 3.90–4.10, wing 1.90–2.00, tail 1.25–1.35, culmen .78–.80. *Young:* Similar to adult female, but feathers of upper parts margined terminally with light buffy or pale rusty, the male with throat streaked with dusky. *Eggs* .50 × .33. *Hab.* Western United States, east to Rocky Mountains, south over table-lands of Mexico........... 429. **T. alexandri** Bourc. & Muls.

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[1] Except in species of *Atthis.*

(47.) **Black-chinned Hummingbird.**

d^2. Outer tail-feather decidedly shorter than middle pair, or else decidedly longer, abruptly narrower than the next.[1]

e^1. Tail without any rufous; *adult males* with tail forked (but feathers not pointed), and top of head brilliant metallic reddish purple, or violet, like gorget. (Subgenus *Calypte* Gould.)

f^1. Outer tail-feather in adult male abruptly much narrower than the others; rump and middle tail-feathers metallic green or bronze, like back.

g^1. *Adult male:* Head, including ruff, brilliantly burnished metallic amethyst-violet, changing to blue and green; length about 2.75–3.20, wing 1.75–1.90, tail 1.10, culmen .65–.68. *Adult female:* Lower parts grayish white, very faintly tinged with green on sides and flanks; centre of throat usually more or less spotted with metallic violet-purplish; length about 3.55–3.70, wing 1.70, tail 1.05, culmen .70. *Young:* Similar to adult female, but metallic colors rather duller, and feathers of upper parts narrowly tipped or margined with buffy whitish. *Nest* about 1.50 wide by 1.00 deep externally, the cavity about 1.00 wide by .80 deep, composed of grayish lichens, small strips of thin bark, spiders' webs, etc., lined with downy materials, including (usually) a few soft feathers. *Eggs* .48 × .31. *Hab.* Lower California, southern California and Arizona, and western Mexico, south to Mazatlan.

430. **T. costæ** (Bourc.). **Costa's Hummingbird.**

g^2. *Adult male:* Head, including ruff, brilliant metallic changeable purplish red, with violet reflections; length about 3.40–3.60, wing 1.90–2.00, tail 1.30–1.45, culmen .65–.70. *Adult female:* Lower parts pale grayish, glossed on sides and flanks with green; centre of throat usually more or less spotted with metallic reddish purple; length about 3.80–4.15, wing 2.05, tail 1.30, culmen .75. *Eggs* .52 × .34. *Hab.* Valleys of California, and south through Arizona to table-lands of Mexico.

431. **T. anna** (Less.). **Anna's Hummingbird.**

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[1] Except in *Calypte helenæ*, which see.

f^2. Lateral tail-feather in adult male not distinctly narrower than the rest; rump and upper tail-coverts metallic blue (in both sexes).

Adult male: Head, including ruff, metallic purplish red; length about 2.50, wing 1.10–1.15, tail .65, culmen .40. (Female slightly larger.) *Hab.* Cuba.

T. helenæ (GUNDL.). **Princess Helena's Hummingbird.**[1]

e^2. Tail with more or less of rufous, more or less graduated (middle feathers longest, or equal to longest) in both sexes; adult males with top of head greenish or bronzy, totally different from color of gorget (except in *T. floresii*). (Subgenus *Selasphorus* SWAINS.)

f^1. Middle pair of tail-feathers entirely green; gorget of adult male soft, rather light, rose-purple, or solferino; wing more than 1.90.

Adult male: Tail-feathers, except middle pair, dull purplish black, the next to middle pair distinctly edged with rufous (the next pair sometimes narrowly edged with same); length about 4.00–4.25, wing 1.92–2.05, tail 1.40–1.60, exposed culmen .62–.70. *Adult female:* Three outer tail-feathers rufous at base and broadly tipped with white, the intervening space blackish, with some green next to rufous on second and third feathers; fourth feather green to extreme base, but edged with rufous and marked by a large terminal or subterminal spot of black; length about 4.10–4.70, wing 2.00–2.10, tail 1.45–1.50, exposed culmen .70–.72. *Eggs* .50 × .33. *Hab.* Rocky Mountains of United States, north to Wyoming, Montana, and Idaho Territories, west to Sierra Nevada (?), south over tablelands of Mexico to highlands of Guatemala.

432. **T. platycercus** SWAINS.
Broad-tailed Hummingbird.

f^2. Middle tail-feathers partly rufous; gorget of adult male intensely brilliant metallic fire-red, changing to orange, brassy green, and crimson, the feathers much lengthened laterally and posteriorly; wing less than 1.90.

g^1. *Adult males* with top of head dull bronzy or greenish, the middle tail-feathers rufous, marked on terminal portion with a dusky mesial streak, the outer feather with inner web entirely rufous, the belly, sides, and flanks also rufous. *Adult females* with all the tail-feathers rufous for basal half (but green on middle pair running along median portion nearly to base), the three outer feathers broadly tipped with white and marked by a subterminal broad band of blackish; belly white, but sides, flanks, and under tail-coverts light rufous. *Young males:* Similar to adult female, but feathers of upper parts bordered with pale rusty, the rump showing much rufous, and throat usually with one or more feathers (new moult) of bright metallic red. *Young females:* Similar to young males, but rump entirely green, and throat showing only dull greenish specks.

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[1] *Orthorhynchus helenæ* "GUNDL., sus manuscritos," LEMB., Aves de la Isla de Cuba, 1850, 70, pl. 10, fig. 2. *Calypte helenæ* GOULD, Mon. Troch. iii. pl. 136.

h[1]. *Adult male:* Tail-feathers broad, the second (from middle) with a deep notch near end of inner web, and outer web sinuated near tip; outer feather more than .10 broad; upper parts rufous, the crown (and, rarely, the back) glossed with dull metallic green; length about 3.25–3.70, wing 1.50–1.60, tail 1.30–1.35, culmen .60. *Adult female:* Outer tail-feather more than .10 wide; length about 3.50–3.90, wing 1.75–1.80, tail 1.25–1.30, culmen .65–.70. *Eggs* .50 × .33. *Hab.* Western North America, north beyond northern border of United States (to or beyond Sitka on Pacific coast), east to Rocky Mountains, south over tablelands of Mexico........... 433. **T. rufus** GMEL.
Rufous Hummingbird.

h[2]. *Adult male:* Tail-feathers narrow, the second (from middle) without notch or sinuation; outer feather much less than .10 broad; whole back, as well as crown, bright metallic green; length about 3.25–3.30, wing 1.50–1.55, tail 1.10–1.20, exposed culmen .60–.65. *Adult female:* Outer tail-feather not more than .10 wide; length about 3.40, wing 1.65–1.70, tail 1.05–1.15, exposed culmen .68–.70. *Eggs* .50 × .33. *Hab.* Coast district of California, north to British Columbia, south to Arizona.
434. **T. alleni** (HENSH.).
Allen's Hummingbird.

g[2]. *Adult male* with top of head brilliant metallic red, like gorget, the middle tail-feathers green bordered with rufous, the outer tail-feather wholly dusky, the belly white, the sides and flanks green. *Adult female* unknown. Length 3.25, wing 1.75, tail 1.40, exposed culmen .65. *Hab.* Mexico (Bolanos) and southern California (San Francisco)...... 431.1. **T. floresii** (GOULD). **Floresi's Hummingbird.**[1]

*c*². Exposed culmen not more than .50; outer tail-feathers broadly tipped with white in both sexes. (*Adult males* bronzy green or bronzy above, the middle tail-feathers broadly edged with rufous on inner web, the other tail-feathers with basal half rufous, then purplish black, the two or three outermost broadly tipped with white; gorget rich metallic purplish; chest and other median lower parts white, the sides and flanks rufous, tinged or spotted with greenish or bronzy. *Adult females* similar to males, but throat dull white, spotted with dull greenish or bronzy; under tail-coverts pale rufous; four middle tail-feathers without rufous edgings.) (Subgenus *Atthis* REICHENBACH.)

*d*¹. *Adult male:* Outer quill narrow, abruptly attenuated at tip; gorget brilliant metallic reddish violet, with decided violet tints in certain lights; basal half (approximately) of tail rufous, terminal half black, the three outer feathers broadly tipped with white; chest and middle line of belly white, sides and flanks light rufous, tinged with green. *Adult female:* Whole throat whitish, but otherwise similar to the male. Length about 2.75, wing 1.30–1.50, tail .95–1.10, culmen .48–.50. *Hab.* Eastern Mexico.

T. heloisa (LESS. & DELATTR.). **Heloise's Hummingbird.**[2]

*d*². *Adult male* with outer quill broad, not attenuated at tip; gorget metallic reddish purple, without violet tints; otherwise much like *T. heloisa;* wing 1.35, tail 1.00–1.05, culmen .38–.40. *Hab.* Highlands of Guatemala.

T. ellioti RIDGW. **Elliot's Hummingbird.**[3]

*b*². Middle tail-feathers broader near end than toward base. (Subgenus *Stellula* GOULD.)

Adult male: Feathers of gorget narrow, elongated, pure white basally, metallic purplish terminally; tail-feathers plain dusky, edged with rufous toward base; sides and flanks tinged with rufous; length about 2.75–3.00, wing 1.50–1.60, tail .90–1.10, exposed culmen .55–.58. *Adult female:* Tail more rounded than in male, feathers dull green basally and tipped with white (except middle pair); throat whitish, sometimes spotted centrally with dull metallic purple; otherwise much like adult male; length about 3.50, wing 1.75–1.80, tail 1.10–1.15, culmen .58–.60. *Eggs* .46 × .31. *Hab.* Western United States, north to British Columbia, Idaho, and northern Montana, east to Rocky Mountains, south to table-lands of Mexico. 436. **T. calliope** GOULD. **Calliope Hummingbird.**

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[1] *Selasphorus floresii* GOULD, Mon. Troch. pt. xxiii. Sept. 1, 1861 (vol. iii. pl. 139).
This is possibly a hybrid between *T. anna* and *T. rufus.* The capture of the San Francisco specimen (in May, 1885) is recorded, by Mr. Walter E. Bryant, in "Forest and Stream," vol. xxvi. No. 22, July 24, 1886, p. 426.

[2] *Ornismyia heloisa* LESS. & DELATTR., Rev. Zool. 1839, 15. *Trochilus heloisa* GRAY, Hand-b. i. 1869, 145.

[3] *Atthis ellioti* RIDGW., Proc. U. S. Nat. Mus. i. July 1, 1878, 9.

*a*². Exposed culmen more than half as long as wing, the bill decidedly curved. (*Adult males* with tail deeply forked, uniform purplish black, except four middle feathers, which are green, like upper parts; gorget (the feathers of which are much elongated laterally and posteriorly) brilliant metallic amethyst-purple, changing to violet-blue; median lower parts white, sides and flanks mixed bronzy green and pale rufous. *Adult females* green above, light cinnamon-buffy beneath (but belly and under tail-coverts white), tail much less deeply forked than in male, with broader feathers, the three outermost of which are broadly tipped with white and rufous at base.) (Subgenus *Calothorax* GRAY.)

*b*¹. *Adult male* with outer tail-feather much narrower than the next and tapering to a narrow point; length about 3.40–3.60, wing 1.40–1.60, tail 1.25–1.35, exposed culmen .85–.90. *Adult female:* Wing 1.65–1.80, tail 1.20–1.25, exposed culmen .75–.90. *Hab.* Table-lands of Mexico, north to southern Arizona.... 437. **T. lucifer** (SWAINS.). **Lucifer Hummingbird.**

*b*². *Adult male* with outer tail-feather not narrower than the next, and not tapering to a narrow point; length about 3.10–3.25, wing 1.50, tail 1.50, exposed culmen .75. *Adult female:* Wing 1.65, tail 1.15, exposed culmen .75. *Hab.* Southwestern Mexico (Oaxaca). **T. pulcher** (GOULD). **Beautiful Hummingbird.**[1]

GENUS **AMAZILIA** LESSON. (Page 308, pl. XC., fig. 2.)

Species.

COMMON CHARACTERS.—Above green, bronze-green, or bronzy, the tail rufous, chestnut, bronzy, purple, or blue-black; lower parts green anteriorly, or entirely light cinnamon; sexes alike.

*a*¹. Lower parts partly green.

*b*¹. Secondaries entirely dusky.

*c*¹. Belly and flanks dull brownish gray, the latter glossed with green; outer tail-feather with outer web chiefly or entirely dark bronzy; upper tail-coverts uniform chestnut; tail deep chestnut, feathers bordered terminally with bronzy; lower tail-coverts deep cinnamon-rufous. *Young* similar to adult, but rump tinged with rufous, and forehead washed with rusty; length about 4.00, wing 2.00–2.35, tail 1.45–1.70, exposed culmen .70–.90. *Hab.* Whole of Central

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[1] *Calothorax pulchra* GOULD, Ann. & Mag. N. H. ser. 3, iv. 1859, 97.

America and eastern Mexico, north to southern Texas, south to western Ecuador.

438. **A. fuscicaudata** (FRASER). **Rieffer's Hummingbird.**

*c*². Belly and flanks cinnamon-rufous, cinnamon, or ochraceous; outer tail-feather entirely rufous, except sometimes a narrow margin (of dull bronzy) to outer web; upper tail-coverts chiefly green or bronzy; tail light chestnut, or chestnut-rufous, the feathers (except outer) broadly margined terminally with bronzy or violet-dusky, the middle feathers sometimes entirely bronzy or violet-dusky.

*d*¹. Lower breast, belly, sides, and flanks pale cinnamon, or cinnamon-buff, not abruptly defined against green of more anterior portions; length about 4.00–4.50, wing 2.15–2.30, tail 1.50–1.70, exposed culmen .70–.80. *Hab.* Eastern Mexico, north to lower Rio Grande Valley in Texas.

439. **A. cerviniventris** GOULD. **Buff-bellied Hummingbird.**

*d*². Lower breast, belly, sides, and flanks deep cinnamon, or cinnamon-rufous, abruptly contrasted with green of more anterior portions; wing 2.20–2.25, tail 1.40–1.60, exposed culmen .70. *Hab.* Yucatan.

A. yucatanensis (CABOT). **Cabot's Hummingbird.**[1]

*b*². Secondaries rufous or chestnut at base.

*c*¹. Tail mainly chestnut, or rich purple-bronze.

*d*¹. Outer webs of quills (except longer ones) chiefly chestnut or rufous; secondaries chestnut or rufous tipped with dusky; outer tail-feathers deep chestnut; wing 2.10–2.20, tail 1.30–1.40, exposed culmen .70–.80. *Hab.* Southern Mexico, north to Jalapa, Chihuahua, and Sonora.

A. beryllina (LICHT.). **Berylline Hummingbird.**[2]

*d*². Outer webs of quills with rufous only at extreme base, and sometimes concealed or nearly obsolete; secondaries dusky for at least terminal half of exposed portion; outer tail-feathers very dark chestnut, bordered terminally with bright purple or bronze; middle tail-feathers usually richer bronze or purple than in *A. beryllina;* wing 2.10–2.25, tail 1.30–1.40, exposed culmen .65–.78. *Hab.* Guatemala.

A. devillii (BOURC.). **Maria's Hummingbird.**[3]

*c*². Tail neither chestnut nor purple-bronze.

*d*¹. Tail greenish bronze. *Hab.* Mexico.

A. ocai GOULD. **D'Oca's Hummingbird.**[4]

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[1] *Trochilus yucatanensis* CABOT, Proc. Nat. Hist. Soc. Bost. 1845, 74. *Amazilia yucatanensis* GOULD, Mon. Troch. pt. xxiii. 1861 (vol. v. 1861, pl. 308).

[2] *Trochilus beryllinus* LICHT., Preis-Verz. 1830, No. 26. *Amazilia beryllina* GOULD, Mon. Troch. pt. xxii. 1861 (vol. v. 1861, pl. 312).

[3] *Trochilus devillii* BOURC., Rev. Zool. 1848, 272. *Amazilia devillii* REICH., Aufz. der Colib. 1854, 10.

[4] *Amazilia ocai* GOULD, Ann. Mag. N. H. ser. 3, iv. 1859, 96; Mon. Troch. v. 1861, pl. 289.

d^2. Tail rich blue-black. *Hab.* Guatemala and Nicaragua.
A. cyanura GOULD. **Blue-tailed Hummingbird.**[1]

a^2. Lower parts entirely uniform cinnamon.

b^1. Smaller: Wing 2.15–2.25, tail 1.40–1.50, exposed culmen .80–.88. *Hab.* Nicaragua, Salvador, Guatemala, Honduras, and southern Mexico, north to Yucatan and Mazatlan.
A. cinnamomea (LESS.). **Cinnamomeous Hummingbird.**[2]

b^2. Larger: Wing 2.50–2.70, tail 1.75–1.85, exposed culmen .90–1.05. *Hab.* Tres Marias Islands, western Mexico.
A. graysoni LAWR. **Grayson's Hummingbird.**[3]

GENUS **BASILINNA** BOIE. (Page 309, pl. XC., fig. 6.)

Species.

COMMON CHARACTERS.—Above metallic green, darker or duller on top of head; tail mainly chestnut or blackish, the middle feathers, however, with more or less green; a broad and very conspicuous white stripe behind eye, with a black, dusky, or brownish one immediately beneath it, across ear-coverts. *Adult males* with forehead and chin black or deep blue, the throat and upper part of chest brilliant metallic emerald-green. *Adult females* with top of head dull brownish (sometimes tinged with green), and lower parts pale cinnamon, with or without green spots on throat, or dull grayish white, with sides green.

a^1. Tail mainly chestnut; posterior lower parts pale cinnamon. *Adult male:* Forehead and chin opaque black, or dull blue-black; middle tail-feathers chestnut centrally, metallic green exteriorly, the rest without dusky subterminal bar or spot. *Adult female:* Lower parts pale cinnamon, with or without green spots on throat; middle tail-feathers entirely green, the rest marked by a more or less distinct subterminal spot of dusky. Length about 3.30–3.50, wing 2.00–2.10, tail 1.30–1.45, exposed culmen. 65–.70. *Nest* about 1.50 in diameter by about .80 in height, the cavity about 1.00 × .55–.60; composed of various soft vegetable fibres (especially raw cotton, spiders' webs, etc.), and attached to small twigs. *Eggs* .48 × .31. *Hab.* Southern portion of Lower California.................. 440. **B. xantusi** (LAWR.). **Xantus's Hummingbird.**

a^2. Tail mainly blackish; posterior lower parts dull whitish, mixed with grayish brown and greenish. *Adult male* with forehead and chin deep rich blue; middle tail-feather entirely metallic green or bronze, the others tipped with green or bronzy. *Adult female:* Lower parts dull light grayish, or grayish white, more or less spotted with green, the sides almost continuously of this color; middle tail-feathers entirely green or bronzy, the others black, the two or three outer ones tipped with dull grayish. Length, about 3.25–3.40, wing 2.00–2.30, tail 1.30–1.50, exposed culmen .65–.68. *Hab.* Highlands of Guatemala and Mexico, north to southern Arizona.

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[1] *Amazilia cyanura* GOULD, Mon. Troch. pt. xviii. 1850 (vol. v. pl. 315).

[2] *Ornismya cinnamomea* LESS., Rev. Zool. 1842, 175. *Amazilia cinnamomea* ELLIOT, Class. & Synop. Troch. 1879, 219.

[3] *Amazilia (Pyrrhophæna) graysoni* LAWR., Ann. Lyc. N. Y., 1867, 404.

440.1. **B. leucotis** (Vieill.). **White-eared Hummingbird.**[1]

Genus IACHE Elliot. (Page 308, pl. XC., fig. 5.)

Species.

Common Characters.—*Adult males* metallic grass-green above, the tail-feathers blackish, with dull gray tips (broadest on middle feathers); downy thigh-tufts pure white; under tail-coverts whitish or light grayish, mixed with darker; rest of lower parts metallic green, bluish green, or blue; bill pale brownish (red in life) on basal portion, blackish at end. *Adult females* metallic grass-green above, pale grayish beneath, the two exterior tail-feathers tipped with pale brownish gray, and all with the basal half green.

*a*¹. Under tail-coverts in adult males white or grayish, with or without darker centres.

*b*¹. Under tail-coverts whitish on margins, darker in centre; upper tail-coverts blue or green.

*c*¹. Under tail-coverts white with dull gray centres in adult male, entirely white in young. *Adult male:* Upper parts grass-green, sometimes inclining to bronzy green; chin and throat rich metallic blue, passing gradually into rich green on breast and belly; length about 3.50–3.75, wing 2.00–2.20, tail 1.35–1.50 (forked for .25–.35), culmen .75–.85. *Adult female:* Above grass-green, becoming dull gray on forehead; lower parts uniform pale ash-gray; basal half of tail, with whole extent of its middle feathers, green, the two outer feathers tipped with dull gray; a whitish streak behind eye, with a dusky space immediately beneath it and extending beneath eye; length 3.88–4.10, wing 2.00–2.15, tail 1.25–1.30 (forked for about .15), culmen .78–.85. *Young male:* Similar to adult female, but tail as in adult male; lower tail-coverts uniform white; feathers of upper parts margined with pale buff; new feathers appearing on throat bluish green (instead of blue, as in adult), becoming more bluish toward chin. *Young female:* Similar to adult, but feathers of upper parts bordered with pale buff. *Hab.* Western Mexico, south to Colima, north to southern Arizona.

441. **I. latirostris** (Swains.). **Broad-billed Hummingbird.**

*c*². Under tail-coverts entirely white in adult (?) male. *Adult (?) male:* Upper parts "reddish bronze"; throat and upper parts of breast metallic bluish green; under parts bronzy green with a coppery lustre; length 3.25, wing 1.90, tail 1.15, culmen .75. *Hab.* Western Mexico (Mazatlan).

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[1] *Trochilus leucotis* Vieill., Nouv. Dict. ed. 2, xxiii. 1818, 428. *Basilinna leucotis* Reich., Aufz. der Colib. 1853, 13.

I. magica (Muls. & Verr.). **Magic Hummingbird.**[1]

*b*². Under tail-coverts in adult male dusky gray, glossed with green, and bordered with grayish white; upper tail-coverts dull smoke-gray, like tips of middle tail-feathers.

Adult male: Above bronze-green or greenish bronze; chin and throat metallic emerald-green (with a bluish cast only in certain lights); remaining under parts bronzy green or greenish bronze; wing 2.10, tail 1.40 (forked for .25–.35), culmen .70. *Hab.* Tres Marias Islands, western Mexico.

I. lawrencei Berl. **Lawrence's Hummingbird.**[2]

*a*². Under tail-coverts in adult male uniform blue-black.

Adult male: Above metallic bronze-green, including upper tail-coverts; the hind-neck more grass-green, and the forehead brilliant metallic greenish blue, passing into shining green on crown; entire chin and throat rich deep metallic blue, with a purplish cast in certain lights; breast and belly deep bluish green, the sides more bronzy; wing 1.90–2.00, tail 1.30 (forked for .50), culmen .65. *Hab.* Southern Mexico (Tehuantepec).

I. doubledayi (Bourc.). **Doubleday's Hummingbird.**[3]

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[1] *Hylocharis magica* Muls. & Verr., Ann. Soc. Linn. Lyon, xviii. 1872, 110. *Iache magica* Elliot, Synop. Troch. 1879, 235. [Possibly the young male of *I. latirostris.*]

[2] *Iache lawrencei* Berlepsch, MS.

[3] *Trochilus doubledayi* Bourc., P. Z. S. 1874, 46. *Iache doubledayi* Elliot, Synop. Troch. 1879, 235.

ORDER **PASSERES.**—PERCHING BIRDS. (Page 3.)

Families.

*a*¹. Tarsus cylindrical, or with hinder portion rounded; encircled with a single horny envelope (divided into scutellæ anteriorly and on outer side), this sometimes extending all round (though separated by a seam along inner side), but often widely separated on inner side or behind (or both), the intervening space occupied by granular scales, reticulations, or plain naked skin. (Suborder *Clamatores.*)

  *b*¹. Inner toe with basal phalanx united to that of middle toe; posterior face of tarsus reticulate.. **Cotingidæ.** (Page 323.)

  *b*². Inner toe entirely free at base from middle toe; posterior face of tarsus not reticulate.. **Tyrannidæ.** (Page 326.)

*a*². Tarsus compressed behind, with comparatively sharp posterior edge (or else hind-claw longer than its digit, and straight), the enveloping membrane divided into two or three longitudinal segments, which may be either divided into transverse segments, or scutellæ, or fused into continuous plates. (Suborder *Oscines.*)

  *b*¹. Posterior half of tarsus not compressed, but rounded, and divided into distinct segments, or scutellæ, like the anterior half. **Alaudidæ.** (Page 346.)

  *b*². Posterior half of tarsus compressed, with two lateral plates uniting behind in a comparatively sharp ridge, and for the most part undivided.

    *c*¹. Primaries apparently only 9 (the 10th being exceedingly rudimentary), the tip of the bill not hooked.

      *d*¹. Bill variously formed, but gape never twice as long as culmen; outer primary never twice as long as innermost.

        *e*¹. Bill straight.

          *f*¹. Bill conoid; if slender, the angle of the gonys forward of the nostril.

            *g*¹. Bill without notch, and without bristles at gape. **Icteridæ.** (Page 365.)

            *g*². Bill notched, and with bristles at gape.

              *h*¹. Nostrils concealed by feathers, or pointed anteriorly and overhung by a distinct scale or horny membrane, or else base of cutting-edges forming a distinct angle. **Fringillidæ.** (Page 382.)

              *h*². Nostril exposed, rounded anteriorly, without distinct overhanging scale or membrane, and cutting-edges of bill not forming a distinct angle at the base.. **Tanagridæ.** (Page 453.)

f^2. Bill not conoid; angle of gonys not forward of the nostril.

g^1. Tertials not elongated, but with their tips falling far short of the ends of the longest primaries; hind-claw much shorter than its digit.

Mniotiltidæ. (Page 480.)

g^2. Tertials much elongated, their tips reaching nearly to end of longest primary; hind-claw nearly as long as, or longer than, its digit.

Motacillidæ. (Page 532.)

e^2. Bill curved downward to the very acute tip.

Cœrebidæ (*Cœreba*). (Page 479.)

d^2. Bill very short, very broad at base, and deeply cleft, the gape more than twice as long as the culmen; outer primary more than twice as long as the innermost..... **Hirundinidæ.** (Page 457.)

c^2. Primaries obviously 10, or else tip of bill hooked.

d^1. Tarsi distinctly scutellate.

e^1. Bill only moderately or very slightly hooked at tip.

f^1. Tarsus not longer than middle toe, with claw; bill short, depressed, its width at base exceeding length of the gonys............................ **Ampelidæ.** (Page 463.)

f^2. Tarsus longer than middle toe, with claw, or else the bill elongated, not depressed, narrower at base than length of the gonys.

g^1. Bill not hooked at tip.

h^1. Tail-feathers normal.

i^1. Nasal feathers erect or inclined backward.

j^1. Bill linear, but often curved, the culmen always more or less so; first primary well developed, extending beyond tips of coverts.

Troglodytidæ. (Page 538.)

j^2. Bill elongate-conical, the culmen straight; first primary minute, not reaching to tips of coverts.

Sturnidæ. (Page 364.)

i^2. Nasal feathers directed forward.

j^1. Larger (wing more than 4.00 inches).

Corvidæ. (Page 350.)

j^2. Smaller (wing less than 4.00 inches).

k^1. Bill without notch, more or less conoid... **Paridæ.** (Page 558.)

k^2. Bill notched, very slender.

Sylviidæ (*Polioptilinæ*). (Page 566.)

h^2. Tail-feathers stiff, pointed at tip.

Certhiidæ. (Page 557.)

g^2. Bill slightly hooked at tip.. **Vireonidæ.** (Page 468.)

e^2. Bill strongly hooked and toothed....... **Laniidæ.** (Page 465.)

d^2. Tarsi not divided into scutellæ, except at extreme lower portion.

e^1. Without rictal bristles; nostrils linear; tail excessively short. **Cinclidæ.** (Page 538.)

e^2. With distinct rictal bristles; nostrils oval; tail normally developed.

f^1. Smaller (wing less than 3.00 inches); young not spotted. **Sylviidæ** (*Sylviinæ*, *Regulinæ*). (Page 566.)

f^2. Larger (wing more than 3.00 inches); young distinctly spotted............................ **Turdidæ.** (Page 571.)

FAMILY **COTINGIDÆ**.—THE COTINGAS. (Page 321.)

Genera.

a^1. Nostrils wholly exposed; lores and orbits naked.............................. *Tityra.*[1]

a^2. Nostrils more or less hidden by bristly feathers; lores and orbits feathered.

b^1. Tip of bill very slightly hooked; tail decidedly rounded or graduated; males with second quill very small or rudimentary.

c^1. Tail graduated for only about half the length of the exposed culmen; tarsus stouter, the inner side (posterior half) with a series of large scutellæ; bill more cylindrical............ **Platypsaris.** (Page 324.)

c^2. Tail graduated for about as much as full length of exposed culmen; tarsus slender, the inner side (posterior half) covered by naked skin; bill more flattened............ **Pachyrhamphus.** (Page 325.)

b^2. Tip of bill very distinctly hooked; tail nearly even; males with second quill larger than first.

c^1. Color uniform tawny (darker above); wing six times as long as exposed culmen, more than four times as long as tarsus; culmen more or less distinctly convex, cutting-edge of upper mandible straight or slightly concave, and tip of bill gradually decurved.

d^1. Tarsus stout, very little longer than middle toe, with claw, the upper third feathered in front; culmen curved throughout, and cutting-edge of upper mandible slightly concave; wing 5.00, or more... *Laniocera.*[2]

d^2. Tarsus slender, decidedly longer than middle toe, with claw, entirely naked; culmen nearly or quite straight to near tip, and cutting-edge of upper mandible straight; wing less than 5.00 (in Mexican species).. *Lipaugus.*[3]

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[1] *Tityra* VIEILLOT, Analyse, 1816, 39. Type, *Lanius cayanus* LINN. (One species in Mexico, with others in Central and South America.)

[2] *Laniocera* LESS., Rev. Zool. 1840, 353. Type, *L. sanguinaria* LESS., = *Ampelis hypopyrrha* VIEILL. (One species in Mexico.)

[3] *Lipangus* (*err. typ.*) BOIE, Isis, 1828, 318. Type, *Muscicapa simplex* LICHT. (One species in Mexico.)

c^2. Color brown above (usually streaked with darker on top of head), the rump yellowish or tawny, in marked contrast; lower parts more or less distinctly streaked anteriorly, on a light grayish or olive-yellowish ground; wing not more than four times as long as exposed culmen, decidedly less than four times as long as tarsus; culmen more or less distinctly concave in middle portion, and cutting-edge of upper mandible correspondingly convex, the bill being thus somewhat recurved; tip of bill very abruptly and strongly hooked. *Attila.*[1]

GENUS **PLATYPSARIS** SCLATER.[2] (Page 323, pl. XCV., fig. 3.)

Species.

COMMON CHARACTERS.—*Adult males:* Above nearly uniform grayish or blackish, the top of head always darker than back (or else the latter black also); beneath varying from deep slate-gray to nearly pure white, the chest (sometimes lower throat also) usually with a patch of pure rose-red. *Adult females* and *young males:* Above with more or less of tawny, the back and rump in some species mixed with grayish; top of head varying from dull slate-gray to glossy black; lower parts varying from dull ochraceous to buffy white.

a^1. *Adult males* with rose-colored patch on chest (rarely replaced by patch of whitish, faintly tinged with rosy); *adult females* and *young males* with back and rump dark rusty, rusty grayish, or nearly pure gray.

b^1. *Adult males* with breast, belly, flanks, etc., distinctly, or very decidedly, ash-gray.

c^1. *Adult male:* Top of head glossy blue-black, passing gradually into dull sooty slate on forehead; rest of upper parts uniform slate-gray, sometimes decidedly darker on back. *Adult female:* Top of head blackish slate, becoming paler and browner on forehead; rest of upper parts dark rusty, duller on back, where sometimes approaching a deep hazel or burnt-umber tint. *Young male:* Similar to adult female, but top of head glossy black, as in adult male; in older individuals, the black of adult plumage appearing on back, sides of head, etc., and rose-color tinting the throat. Length about 6.50–6.75, wing 3.30–3.75, tail 2.60–3.00, exposed culmen .60–.68. *Hab.* Eastern Mexico (north to Rio Grande Valley), south to Salvador. **P. aglaiæ** (LAFR.). **Rose-throated Becard.**[3]

c^2. *Adult male:* Top of head dull slate-black posteriorly, gradually becoming deep smoky gray on forehead; rest of upper parts uniform deep ash-gray. *Adult female:* Top of head dull slate-gray (but little darker than back of male), becoming lighter and more brownish on forehead; back, scapulars, and upper part of rump uniform brownish gray; collar across hind-neck, lower rump, and upper tail-coverts pale tawny, tinged with gray; lower parts buffy, nearly white on chin, but much deeper (almost tawny) on ear-coverts. Length about 6.70, wing 3.40–3.50, tail 2.75–2.80, exposed culmen .52–.55. *Hab.* Tres Marias Islands, western Mexico.

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[1] *Attila* LESSON, Traité Orn. 1831, 360. Type, *A. brasiliensis* LESS. (Two, possibly three, species in Mexico and Guatemala.)

[2] *Platypsaris* SCL., P. Z. S. 1857, 72 (ex Bonap., 1854, *nomen nudum*). Type, *Pachyrhamphus latirostris* BP.

[3] *Pachyrhynchus aglaiæ* LAFR., Rev. Zool. 1839, 98. *Platypsaris aglaiæ* SUMICHR. Mem. Bost. Soc. i. 1869, 558.

P. insularis Ridgw. **Grayson's Becard.**[1]

*b*². *Adult males* with breast, belly, flanks, etc., buffy whitish or very pale grayish, sometimes nearly pure white.

Adult male: Above similar to *P. insularis,* but back, etc., decidedly lighter, more ashy, gray. *Adult female:* Top of head slate-black posteriorly, gradually passing into ash-gray on forehead; back, scapulars, and rump dull brownish gray or grayish brown, the wings and tail more rusty; usually a more or less distinct collar of dull ochraceous across hind-neck; lower parts varying from deep ochraceous-buff to buffy white. Length about 6.50–7.00, wing 3.40–3.68, tail 2.70–3.00, exposed culmen .58–.65. *Hab.* Western and southern Mexico (Mazatlan to Yucatan) and north to southern Arizona............. 441.1. **P. albiventris** Lawr. **Xantus's Becard.**[2]

*a*². *Adult males* without rose-colored patch on chest or throat; *adult females* with upper parts, except top of head and tips of quills, uniform clear tawny rufous.

Adult male: Top of head slate-black, deeper and somewhat glossy posteriorly, duller and more slaty on forehead; rest of upper parts uniform slate-gray; lower parts uniform ash-gray, rarely paler and very slightly tinged with rosy on chest. *Adult female:* Top of head dark slaty, in very abrupt and conspicuous contrast with rufous of back; lower parts pale buffy, paler (sometimes nearly white) on belly and chin. Length about 6.25, wing 3.50–3.70, tail 2.60–2.85, exposed culmen .62–.65. *Hab.* Nicaragua and western Costa Rica.

P. latirostris (Bonap.). **Gray-throated Becard.**[3]

GENUS **PACHYRHAMPHUS** GRAY.[4] (Page 323, pl. XCV., fig. 2.)

Species.

*a*¹. Wings and tail parti-colored; sexes very different in color. *Adult male:* Top of head glossy blue-black; hind-neck, lower back, rump, and upper tail-coverts uniform ash-gray; back glossy black superficially, but feathers ash-gray beneath the surface; scapulars mostly white; wings black, with white tips to middle coverts and broad white edgings to greater coverts and tertials; tail black, the feathers broadly tipped with white (decreasing in width toward middle pair); sides of head and entire lower parts plain light ash-gray, nearly white on throat, middle of belly, and under tail-coverts. *Adult female:* Top of head glossy black, mixed with rusty, especially on forehead; wings dusky, the middle and greater coverts broadly tipped, and other wing-feathers edged, with tawny ochraceous; rest of upper parts plain bright tawny, or tawny ochraceous, the tail-feathers with a broad subterminal patch of black; sides of head and entire lower parts uniform buffy ochraceous. *Young male:* Similar to adult female, but paler and more yellowish beneath. Length about 6.25–7.00, wing 3.10–3.25, tail 2.60–2.70, exposed culmen .50–.60, tarsus .70–.80. *Hab.* Eastern Mexico (north to Rio Grande Valley) and south to Guatemala.

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[1] New species; three specimens examined.

[2] *Hadrostomus albiventris* Lawr., Ann. Lyc. N. Y. viii. 1867, 475. (Sixteen specimens examined.)

[3] *Pachyrhamphus latirostris* Bonap., Compt. Rend. xxxviii. 1854, 658.

[4] *Pachyrhamphus* Gray, List Gen. B. 1838, 41. Type, *Pachyrhynchus cuvieri* Spix, = *Tityra viridis* Vieill.

P. major (CAB.). **Thick-billed Becard.**[1]

a^2. Wings and tail unicolored (plain rusty or tawny rufous); sexes alike in color (the adult male being distinguished by rudimentary second primary). Above uniform deep tawny rufous, darker on top of head; lower parts entirely plain tawny ochraceous, paler on chin and middle of belly; length about 5.25–5.50, wing 3.00–3.10, tail 2.45–2.60, exposed culmen .45–.50, tarsus .75–.80. *Hab.* Central America (Guatemala to Colombia).

P. cinnamomeus LAWR. **Rufous Becard.**[2]

FAMILY TYRANNIDÆ.—THE TYRANT FYLCATCHERS. (Page 321.)

Genera.

a^1. Tail much longer than wing, very deeply forked......... **Milvulus.** (Page 327.)

a^2. Tail not longer than wing, not deeply forked.

b^1. Bill from nostril more than half as long as tarsus, the culmen straight for most of its length.

c^1. Adults with a bright-colored (yellow, orange, or red) concealed patch on crown; tarsus not longer than middle toe, with claw.

d^1. Plumage not striped.

e^1. Bill broad at base, its width at nostrils much more than half the distance from nostril to tip; adults with outer quills abruptly narrowed at tip........... **Tyrannus.** (Page 328.)

e^2. Bill narrow at base, its width at nostrils not more than half the distance from nostril to tip; adults with outer quills not narrowed at tip.................. **Pitangus.** (Page 330.)

d^2. Plumage conspicuously striped. (Wing about 4.50.) **Myiodynastes.** (Page 331.)

c^2. Adults without bright-colored patch on crown; tarsus longer than middle toe, with claw (or else a conspicuous white cottony patch on each side of rump[1]).

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[1] *Bathmidurus major* CAB., Weigm. Archiv, 1847, i. 243. *Pachyrhamphus major* SCL., P. Z. S. 1857, 78.

[2] *Pachyrhamphus cinnamomeus* LAWR., Ann. Lyc. N. Y. vii. 1861, 295.

*d*¹. Tail-feathers partly rufous; lower parts uniform ashy for anterior half (approximately), pale yellowish for posterior portion. (Wing about 3.25–4.50.)................ **Myiarchus.** (Page 332.)

*d*². Tail-feathers without any rufous; lower parts not colored as in *d*¹.

*e*¹. Wing at least six times as long as tarsus. (Wing about 3.00–4.25.)..................................... **Contopus.** (Page 336.)

*e*². Wing not more than five times as long as tarsus.

*f*¹. Sexes alike in color, the plumage without any red, and destitute of streaks on lower parts.

*g*¹. Wing more than 3.25......... **Sayornis.** (Page 335.)

*g*². Wing less than 3.25....... **Empidonax.** (Page 339.)

*f*². Sexes very different in color, the adult male with whole top of head and lower parts scarlet, the female and young distinctly streaked beneath. (Wing about 3.25.)......................... **Pyrocephalus.** (Page 345.)

*b*². Bill from nostril less than half as long as tarsus, the culmen much curved.

*c*¹. Wing more than 3.00; lower parts, except throat, pure lemon-yellow; a broad white superciliary stripe; middle of crown, in adult, with a concealed orange patch..................... **Myiozetetes.** (Page 331.)

*c*². Wing less than 2.50; lower parts dull whitish or yellowish white; no superciliary stripe, and top of head without concealed colored patch.. **Ornithion.** (Page 345.)

GENUS **MILVULUS** SWAINSON. (Page 326, pl. XCI., fig. 8.)

Species.

*a*¹. Tail-feathers black, the outer one edged with white; top of head deep black; axillars pure white. *Adult male:* Back light bluish gray; entire lower parts pure white; middle of crown with a concealed patch of bright lemon-yellow; length about 12.00–14.50, wing 4.10–4.75, tail 9.00–10.00. *Adult female:* Similar, but rather smaller, with tail shorter, and yellow crown-spot shorter. *Young:* Similar to adult, but tail much shorter (sometimes scarcely forked), colors duller, the wing-coverts bordered with pale rusty, and no yellow on crown. *Hab.* Tropical America in general, including Lesser Antilles; north, normally, to southern Mexico, accidentally to Mississippi, Kentucky, and New Jersey............... 442. **M. tyrannus** (LINN.). **Fork-tailed Flycatcher.**

*a*². Tail-feathers chiefly white; top of head ash-gray; axillars red or orange. *Adult male:* Above light bluish gray, the back tinged with red; lower parts white, faintly tinged with bluish gray anteriorly, the sides, flanks, and under tail-coverts strongly washed with salmon-pink; axillars and concealed spot in middle of crown scarlet; length about 12.00–15.00, wing 4.40–5.15, tail

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[1] In *"Contopus"* (*i.e., Nuttallornis*) *borealis.*

7.00–10.00. *Adult female:* Similar to the male, but rather smaller, the tail shorter, axillars less intensely red, the flanks, etc., paler salmon-color, and crown-spot indistinct. *Young:* Similar to adult female, but crown-spot wanting. *Nest* of sticks, etc., lined with feathers and other soft materials, built in trees. *Eggs* 3–5, .89 × .67, pure white, or creamy white, boldly but sparingly spotted with rich madder-brown and lilac-gray. *Hab.* Eastern Mexico and southwestern prairie districts of United States, north to Indian Territory, southern Kansas, and southwestern Missouri; accidental at Key West, Florida, at Norfolk, Virginia, New Jersey, New England, Manitoba, and even at York Factory, Hudson's Bay Territory; south to Costa Rica.......... 443. **M. forficatus** (Gmel.). **Scissor-tailed Flycatcher.**

Genus TYRANNUS Cuvier. (Page 326, pl. XCII., fig. 1.)

Species.

Common Characters.—Uniform grayish or blackish above, the middle of the crown with a concealed patch of yellow, orange, or orange-red (except in young); lower parts white, shaded with grayish on sides of chest, or else ashy anteriorly and pale yellow posteriorly. *Nest* bulky, built in trees. *Eggs* handsomely spotted with various shades of brown on a white or cream-colored ground.

a^1. Lower parts white.

b^1. Tail slightly rounded, deep black, with abrupt white tip; upper half of head deep black; bill small, its length from nostril to tip less than length of tarsus.

Adult: Middle of crown with a concealed patch of orange-red; wing-coverts edged or bordered with pure white or grayish white. *Young:* No colored patch on crown; wing-coverts and upper tail-coverts bordered with pale rusty or fulvous, white tail-band and chest tinged with same, and colors duller generally. Length 8.00–9.00, wing 4.45–4.75, tail 3.40–3.75, bill from nostril .50–.57. *Nest* of sticks, rootlets, etc., lined with wool, feathers, etc., built upon trees. *Eggs* 3–5, .95 × .72, white spotted with rich madder-brown, or chestnut, and lilac-gray. *Hab.* Temperate North America (chiefly east of Rocky Mountains and rare on Pacific coast); south, in winter, to Middle America and western South America to Bolivia; Cuba; Bahamas........ 444. **T. tyrannus** (Linn.). **Kingbird.**

b^2. Tail decidedly emarginate, without abrupt white tip; bill very large, its length from nostril to tip exceeding length of tarsus.

c^1. Above grayish brown, the head brownish dusky or dark brown; crown-patch orange-red; wing 5.20–5.30, tail 4.00–4.25, bill from nostril 1.00–1.05. *Hab.* Cuba and Bahamas.

T. magnirostris D'Orb. **Great-billed Kingbird.**[1]

c^2. Above, including top of head, plumbeous-gray. *Adult:* A concealed orange-colored patch in middle of crown; wing-coverts and upper tail-coverts without rusty or buffy margins. *Young:* No crown-patch; wing-coverts and upper tail-coverts more or less distinctly bordered with pale rusty, ochraceous, or buffy. Length about 8.90–9.80, wing 4.45–4.80, tail 3.50–4.05, bill from nostril .75–.82. *Nest* on horizontal branches of (usually small) trees, loosely constructed of twigs, roots, etc., with little if any lining. *Eggs* usually 3, 1.02 × .73, deep cream-color or pinkish buff, spotted or dashed (or both) with madder-brown and purplish gray. *Hab.* West Indies and coasts of Caribbean Sea and Gulf of Mexico, north to Florida, Georgia, and South Carolina; accidental in Massachusetts.

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[1] *Tyrannus magnirostris* D'Orb., La Sagra's Cuba, Ois. 1839, pl. 13.

445. **T. dominicensis** (GMEL.). **Gray Kingbird.**

*a*². Lower parts yellow, the throat and chest grayish or whitish.

*b*¹. Bill excessively stout, all its outlines convex, its depth at base .38, or more, width .53, or more.

Above olive-gray, wings and tail browner, head darker; crown-patch lemon-yellow; chin and throat white, chest more ashy, rest of under parts sulphur-yellow; wing 5.00–5.50, tail 4.00–4.50, bill from nostril .75–.81, depth at base .38–.43, width .53–.60. *Hab.* Mexico, north to Orizaba and Mazatlan.

T. crassirostris SWAINS. **Thick-billed Kingbird.**[1]

*b*². Bill much less stout, its outlines straight, depth at base less than .38, width less than .53.

*c*¹. Tail decidedly emarginate; length of bill from nostril nearly or quite equal to length of tarsus.

Adult male: Head, neck, chest, and back light ash-gray, the last tinged with olive-greenish; wings and tail dusky brownish gray, with paler brownish gray edgings; lower parts, including breast, rich lemon-yellow (the breast tinged with olive), the chin and throat grayish white. *Adult female:* Similar to male, but rather smaller, with tail less deeply emarginate, orange-red crown-spot more restricted, and quills less conspicuously narrowed at tips. *Young:* Similar to adult, but no colored crown-patch, wing-coverts bordered with pale buffy, and yellow of lower parts paler. Length about 9.00–10.00, wing 4.40–5.00, tail 3.75–4.40, bill from nostril .60–.75. *Nest* on trees, composed of small twigs, fine roots, etc., and lined with the latter, together with "the black hair-like heart of the Spanish moss." (SENNETT.) *Eggs* 4, .96 × .73, buff, spotted with rich brown, chiefly round larger end. *Hab.* Mexico and Guatemala, north to southern border of United States (southern Texas to Arizona).

446. **T. melancholicus couchi** (BAIRD). **Couch's Kingbird.**

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[1] *Tyrannus crassirostris* SWAINS., Quar. Jour. Sci., xx. 1826, 278.

c^2. Tail even; length of bill from nostril much less than length of tarsus.

d^1. Head, neck, and breast light ash-gray, paler on chin and throat; wings dusky, with indistinct paler edgings; tail deep black, the lateral feathers with outer webs abruptly white. *Adult male:* Longer quills with tips contracted into lengthened narrow points. *Adult female:* Similar to male, but tips of longer quills less distinctly attenuated, and orange-red crown-spot more restricted. *Young:* similar to adult, but colors paler and duller, the wing-coverts bordered with pale buffy, yellow of belly, etc., much paler, and colored crown-spot wanting. Length 8.00–9.50, wing 4.75–5.25, tail 3.65–4.00, bill from nostril .50–.55. *Nest* and *eggs* like those of *T. tyrannus*, the latter averaging .93 × .69. *Hab.* Western North America, east across Great Plains (accidentally to Maryland, New Jersey, New York, Maine, etc.), south, in winter, through western Mexico to Guatemala........ 447. **T. verticalis** Say. **Arkansas Kingbird.**

d^2. Head, neck, and breast dark ash-gray or plumbeous, the chin and fore-part of malar region abruptly whitish; wings light brownish gray, with broad paler edgings; tail dull black, indistinctly tipped with pale brownish gray, the lateral feathers with outer webs indistinctly pale grayish. *Young:* Similar to adult, but colors much duller, the wing-coverts bordered with pale fulvous or rusty buff, yellow of belly, etc., paler and duller, and colored crown-patch wanting. Length about 8.75–9.00, wing 5.00–5.40, tail 3.70–4.20, bill from nostril .55–.60. *Nest* and *eggs* not essentially different from those of *T. tyrannus* and *T. verticalis*. *Hab.* Mexico and Guatemala, north to along eastern base of Rocky Mountains to southern Wyoming, and coast district of southern California to about lat. 37°; south to Costa Rica.
448. **T. vociferans** Swains. **Cassin's Kingbird.**

Genus **PITANGUS** Swainson. (Page 326, pl. XCII., fig. 3.)

Species.

a^1. Forehead, superciliary stripe, and band across nape white; crown with a large partially concealed patch of bright lemon- or gamboge-yellow; back, scapulars, and rump plain light olive-brown; outer webs of greater wing-coverts, secondaries, primaries, and tail-feathers, broadly edged with rufous, the inner webs of quills and tail-feathers almost entirely of this color; lores and ear-coverts deep black, producing a conspicuous broad stripe along side of head; chin, throat, and malar region pure white; rest of lower parts, including under wing-coverts, continuous deep sulphur- or pale lemon-yellow; length about 10.00–11.00, wing 4.90–5.10, tail 3.90–4.00, exposed culmen 1.15–1.25, tarsus 1.05. *Nest* very bulky, dome- or oven-shaped, with entrance on one side, composed of coarse straws, lichens, etc., lined with finer materials, and placed in thorny trees. *Eggs* 3–5, 1.16 × .84, buffy white speckled and spotted (the markings mostly longitudinal), chiefly on larger end, with madder-brown and purplish gray. *Hab.* Middle America and northern South America, north to lower Rio Grande Valley in Texas.

449. **P. derbianus** (Kaup). **Derby Flycatcher.**

*a*². Whole top and sides of head plain brownish slate, or dusky, becoming lighter and more ashy on forehead; middle of crown with a rather small concealed patch of brownish orange-yellow, or orange-rufous; back, scapulars, and rump plain slate-gray or dull ash-gray, slightly tinged with olive; wings dusky, the middle and greater coverts and tertials conspicuously margined with dull whitish, the quills narrowly edged with the same; tail dull blackish, or dusky, tipped with dull light grayish, the outer web of lateral feather also dull light grayish; lower parts dull whitish, purer on throat and belly, faintly shaded with ashy on breast, and passing into pale sulphur-yellow on axillars, under wing-coverts, flanks, and under tail-coverts; upper tail-coverts broadly but rather indistinctly margined with rusty; length (skins) about 8.00–8.50, wing 4.15–4.40, tail 3.40–3.90, exposed culmen .95–.1.00, tarsus .85–.90. *Hab.* Bahamas.................. **P. bahamensis** Bryant. **Bahaman Petchary.**[1]

Genus MYIOZETETES Sclater. (Page 327, pl. XCV., fig. 1.)

Species.

Adult: Crown and occiput dull brownish gray, enclosing a concealed patch of bright orange-red; forehead and broad superciliary stripe white; lores, malar and suborbital regions, and ear-coverts deep brownish gray (darker than top of head), producing a very broad stripe along side of head; hind-neck and sides of neck like crown, but tinged with olive-green; back, scapulars, lesser wing-coverts, and rump plain olive, or dull olive-green, brighter posteriorly; upper tail-coverts duller (sometimes more grayish) olive, occasionally margined with rusty; wings and tail dusky grayish brown, the feathers edged with paler—the secondaries (especially tertials) with distinct olive-yellowish margins; chin and throat white; rest of lower parts pure gamboge-yellow. *Young:* Similar to adult, but crown without the concealed orange-patch, white portions of head more or less tinged with yellowish, and larger wing-feather and tail-feather margined with light rusty. Length about 6.50–6.75, wing 3.65–4.00, tail 2.20–2.40, exposed culmen .50, tarsus .80. *Nest* similar to that of *Pitangus derbianus*, but smaller. *Eggs* .91 × .66. *Hab.* Middle America, south to Colombia, north to northern Mexico (and southern Texas?).

450. **M. texensis** (Giraud). **Giraud's Flycatcher.**

Genus MYIODYNASTES Bonaparte. (Page 326, pl. XCIII., fig. 1.)

Species.

Common Characters.—Above brownish, striped with black, the lower rump, upper tail-coverts, and tail rufous, streaked medially with black; wings dusky, with conspicuous light edgings; a broad dusky stripe on side of head, involving lores and ear-coverts; above this a superciliary stripe of white or yellowish, and below it a broad white or yellowish malar stripe; chin and throat (at least medially) white, narrowly streaked with dusky; rest of lower parts yellowish or whitish, the chest, breast, and sides broadly streaked with dusky. *Adult* with a concealed crown-patch of lemon- or gamboge-yellow.

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[1] *Pitangus bahamensis* Bryant, Proc. Bost. Soc. N. H. ix. 1864, 279.

*a*¹. Chin and a broad stripe on each side of throat dusky, forming a conspicuous Λ-shaped mark; lower parts, except middle of throat, clear sulphur-yellow; superciliary and malar stripes white; length about 7.75–8.00, wing 4.25–4.60, tail 3.30–3.60, culmen .80–.90. *Hab.* Mexico and Central America, north to southern Arizona, south to Panama.
451. **M. luteiventris** Scl. **Sulphur-bellied Flycatcher.**

*a*². Chin and whole throat white, the latter bordered laterally by a brownish and dusky stripe along lower half of malar region; lower parts whitish, tinged, more or less, with sulphur-yellow, chiefly on sides; superciliary and malar stripes pale dull yellowish.
  *b*¹. Darker, the prevailing color of the upper parts grayish olive-brown; wing 4.40–4.50, tail 3.65–3.75, exposed culmen .85–.90. *Hab.* Cayenne, Trinidad, Tobago, etc.
  M. audax (Gmel.). **Bold Flycatcher.**[1]
  *b*². Paler, the prevailing color of the upper parts light olive, mixed, more or less, with buffy yellowish.
    *c*¹. With longer bill, and plumage more rufescent above, especially on top of head; wing 4.10–4.45, tail 3.40–3.75, exposed culmen .90–1.05. *Hab.* Venezuela, Colombia, Ecuador, and north to Costa Rica.
    M. audax nobilis (Scl.). **Noble Flycatcher.**[2]
    *c*². With shorter bill, and almost total absence of rusty tinge to upper parts; wing 4.25–4.40, tail 3.50–3.60, exposed culmen .80–.90. *Hab.* Southeastern Mexico (Yucatan to Mirador).
    M. audax insolens Ridgw. **Insolent Flycatcher.**[3]

Genus MYIARCHUS Cabanis. (Page 327, pl. XCIII., fig. 2.)

Species.

Common Characters.—Above plain grayish brown or olive (the top of head sometimes much darker), the wings dusky, with more or less distinct lighter edgings; tail-feathers sometimes uniform dusky, but usually with more or less rufous, especially on inner webs, which are sometimes entirely of this color; quills (occasionally adjacent secondaries also) sometimes edged with rusty; anterior lower parts plain ashy or ashy white (the breast obsoletely streaked in *M. flammulatus*), the posterior lower parts (from breast back) varying from deep sulphur-yellow to yellowish white. *Young* with more rufous on tail, etc., than adults. *Nest* usually in holes of trees. *Eggs* 3–6, curiously marked with fine "pen-lines" and intricate pencillings of black and various shades of rich purplish brown over a buffy or creamy brown.

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[1] *Muscicapa audax* Gmel., S. N. i. pt. ii. 1788, 934. *Myiodynastes audax* Scl., P. Z. S. 1859, 43. (The above diagnosis based on examination of two specimens only, these from Tobago.)

[2] *Myiodynastes nobilis* Scl., P. Z. S. 1859, 42.

[3] New subspecies. Type, No. 27977, U. S. Nat. Mus., Mirador (Vera Cruz), Mexico; Dr. C. Sartorius.

a^1. Inner webs of tail-feathers chiefly rufous.

b^1. A broad dusky stripe, of uniform width, along inner side of shaft of outer tail-feathers. (Above olive, browner on top of head, and more or less tinged with rusty on upper tail-coverts; outer webs of quills edged with rusty; chin, throat, and breast pale ashy, sometimes almost white on throat; rest of under parts pale sulphur-yellow.)

c^1. Smaller: Length about 8.50–9.00, wing 3.80–4.20 (4.01), tail 3.80–4.25 (4.04), bill from nostril .62–.75 (.66), tarsus .82–.92 (.90). *Eggs* .88 × .69, averaging much paler than those of *M. crinitus*. *Hab.* Eastern and southern Mexico, north to lower Rio Grande Valley in Texas, south to Guatemala and Salvador.

453. **M. mexicanus** (Kaup). **Mexican Crested Flycatcher.**

c^2. Larger: Length about 9.40–10.00, wing 4.04–4.60 (4.30), tail 4.10–4.60 (4.29), bill from nostril .68–.82 (.73), tarsus .97–1.02 (1.00). *Hab.* Western Mexico, north to southern Arizona; south, in winter, to Tehuantepec.................... 453*a*. **M. mexicanus magister** Ridgw. **Arizona Crested Flycatcher.**

b^2. Without a broad dusky stripe along inner side of shaft of outer tail-feather, except sometimes near tip.

c^1. Throat and chest deep ash-gray, belly bright sulphur-yellow, back, etc., decidedly olive.

Length about 8.50–9.00, wing 3.90–4.40, tail 3.50–4.20, bill from nostril .55–.65, tarsus .78–.82. *Eggs* .89 × .69. *Hab.* Eastern United States, north to southern Canada, west to edge of Great Plains; south, in winter, through eastern Mexico and Central America to Costa Rica.

452. **M. crinitus** (Linn.). **Crested Flycatcher.**

c^2. Throat and chest very pale ashy, sometimes almost white on former; belly pale sulphur-yellow; back, etc., grayish brown.

d^1. Inner web of outer tail-feather dusky at tip (excepting in young, in which tail-feathers are rufous, with median dusky stripe), the outer web distinctly whitish.

Length about 8.00–8.50, wing 3.80–4.25, tail 3.65–4.20, bill from nostril .52–.60, tarsus .88–.95. *Eggs* .88 × .65, colored and marked like those of *M. mexicanus*. *Hab.* Western United States, east to Rocky Mountains, south over highlands of Mexico (to lowlands of Tehuantepec in winter).

454. **M. cinerascens** Lawr. **Ash-throated Flycatcher.**

d^2. Inner web of outer tail-feather without dusky at tip, and outer web not distinctly whitish.

e^1. Smaller; tail not decidedly, if at all, shorter than wing; upper tail-coverts not distinctly tinged with rusty; wing 3.40–3.70 (3.57), tail 3.35–3.80 (3.56), bill from nostril .40–.56 (.50), tarsus .80–.88 (.85). *Hab.* Southern Arizona (Tucson, etc.) to western Costa Rica (La Palma).

454*a*. **M. cinerascens nuttingi** Ridgw. **Nutting's Flycatcher.**[1]

e^2. Larger; tail decidedly shorter than wing; upper tail-coverts decidedly tinged with rusty (sometimes with rusty prevailing); wing 3.65–3.90 (3.74), tail 3.45–3.60 (3.52), bill from nostril .60–.62 (.61), tarsus .85–.90 (.87). *Hab.* Nicaragua.

M. brachyurus Ridgw. **Nicaraguan Crested Flycatcher.**[2]

a^2. Inner webs of outer tail-feathers chiefly (sometimes entirely) dusky or dull grayish brown.

b^1. Width of bill at frontal feathers decidedly less than length of gonys; no trace of streaks on breast.

c^1. Bill very little flattened, its depth through middle nearly equal to width at same place.

d^1. Belly and flanks sulphur-yellow; middle wing-coverts tipped with dull grayish brown; quills very distinctly edged with rusty.

Wing 3.40–3.50, tail 3.50–3.60, bill from nostril .52–.55, tarsus .81–.85. *Hab.* Yucatan.

M. yucatanensis Lawr. **Yucatan Crested Flycatcher.**[3]

d^2. Belly and flanks white or yellowish white; middle wing-coverts tipped with pale brownish gray or grayish white; quills very indistinctly, if at all, edged with rusty.

e^1. Middle wing-coverts tipped with light brownish gray; top of head deep sepia-brown; wing 3.20–3.45 (3.33), tail 3.20–3.40 (3.33), bill from nostril .55–.58 (.57), tarsus .78–.80. *Hab.* Cuba.

M. sagræ Gundl. **Cuban Crested Flycatcher.**[4]

e^2. Middle wing-coverts tipped with grayish white; top of head hair-brown; wing 3.35–3.55 (3.46), tail 3.25–3.50 (3.40), bill from nostril .58–.60 (.59), tarsus .85–.86 (.85). *Hab.* Bahamas.

M. lucaysiensis Bryant. **Bahaman Crested Flycatcher.**[5]

c^2. Bill much flattened, its depth in middle portion not more than two-thirds its width at same place.

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[1] *Myiarchus nuttingi* Ridgw., Proc. U. S. Nat. Mus. v. Sept. 5, 1882, 395. (Type, No. 87391, U. S. Nat. Mus., La Palma, Costa Rica, Apr. 27, 1882; C. C. Nutting.)

[2] New species; type, No. 91057, U. S. Nat. Mus., ♂ad., Ometepec, Nicaragua, March 7, 1883; C. C. Nutting.

[3] *Myiarchus yucatanensis* Lawr., Proc. Ac. Nat. Sci. Phil. 1871, 235.

[4] *Muscicapa sagræ* Gundl., Jour. Bost. Soc. N. H. vi. 1852, 313. *Myiarchus sagræ* Gundl., J. f. O. 1872, 424.

[5] *Tyrannula* (*Myiarchus*) *stolida* (var. *lucaysiensis*) Bryant, Pr. Bost. Soc. N. H. xi. 1866, 66.

d^1. Tail with distinct rufous edgings to inner webs, or else without distinct rusty edgings to outer webs.

e^1. Darker, the top of head more or less sooty, decidedly darker than back; quills, secondaries, and tail-feathers conspicuously edged with rusty, and upper tail-coverts strongly tinged with same; inner webs of tail-feathers usually broadly edged with rufous; length about 7.00, wing 3.10–3.40 (3 24), tail 3.00–3.40 (3.24), bill from nostril .50–.58 (.52), tarsus .75–.80 (.77). *Hab.* Eastern Mexico, north to lower Rio Grande Valley in Texas; Guatemala.

455. **M. lawrenceii** (Giraud). **Lawrence's Flycatcher.**

e^2. Paler, with top of head hair-brown or olive, very little darker than color of back; quills, secondaries, and tail-feathers usually without distinct rusty edgings—often without any rusty; inner webs of tail-feathers usually without rufous edges; length 7.00–7.30, wing 2.90–3.25 (3.11), tail 3.00–3.25 (3.14), bill from nostril .48–.55 (.51), tarsus .70–.75 (.73). *Hab.* Western Mexico, north to southern Arizona, south, in winter, to southern Mexico, including Yucatan .. 455*a*. **M. lawrenceii olivascens** Ridgw. **Olivaceous Flycatcher.**

d^2. Tail-feather without rufous edgings to inner webs, but outer webs very distinctly edged with rusty, and upper tail-coverts strongly tinged with same; belly and flanks very pale sulphur-yellow.

Top of head dull sooty, but scarcely brownish; back dull grayish hair-brown; wing 3.00, tail 3.00, bill from nostril .50, width at base .33, tarsus .80.

M. platyrhynchus Ridgw. **Cozumel Flycatcher.**[1]

b^2. Width of bill at frontal feathers very little, if any, less than length of gonys; breast very indistinctly clouded or streaked with pale grayish.

Top of head olivaceous, like back; middle, greater, and last row of lesser wing-coverts tipped with buffy or light rusty; length about 6.00, wing 2.90–3.00, tail 3.00–3.10, bill from nostril .40, width at base .40, tarsus .70–.72. *Hab.* Southwestern Mexico (Mazatlan to Tehuantepec).

M. flammulatus Lawr. **Flammulated Flycatcher.**[2]

Genus **SAYORNIS** Bonaparte. (Page 327, pl. XCIV., fig. 3.)

Species.

Common Characters.—Above plain olive-grayish or blackish, the tail black or dusky, its lateral feathers with outer webs edged with whitish; lower parts varying in color according to species. *Young:* Similar to adults, but wing-coverts tipped with light rusty. *Nest* a compact and bulky felted mass, decorated exteriorly with mosses, etc., and lined with soft feathers, attached to rocks, to beams of buildings, bridges, etc. *Eggs* 3–8, pure white, sometimes finely but sparsely speckled round larger end with dark brownish.

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[1] *Myiarchus platyrhynchus* Ridgw., Descr. N. Sp. B. Cozumel, 1885, 3.

[2] *Myiarchus flammulatus* Lawr., Ann. Lyc. N. Y. xi. July, 1874, 71.

*a*¹. Belly white or very pale yellowish.

*b*¹. Above olive-grayish, darker on top of head; lower parts entirely whitish, more or less strongly tinged posteriorly with pale yellowish, the sides of the breast tinged with olive-grayish; length about 6.25–7.00, wing 3.25–3.55, tail 3.00–3.40. *Eggs* .75 × .57. *Hab.* Eastern North America; south, in winter, to eastern Mexico and Cuba.

456. **S. phœbe** (LATH.). **Phœbe.**

*b*². Above, together with anterior and lateral lower parts, slate-black; belly and lower tail-coverts white; length about 6.25–7.00, wing 3.55–3.80, tail 3.45–3.75. *Eggs* .74 × .57. *Hab.* Mexico and northward, along Pacific coast to Oregon, eastward to southern Texas.

458. **S. nigricans** (SWAINS.). **Black Phœbe.**

*a*². Belly light cinnamon, or tawny ochraceous.

Above light brownish gray, the tail black; anterior lower parts light brownish gray, posterior portions light cinnamon or tawny ochraceous; length about 7.50–8.05, wing 3.90–4.25, tail 3.35–3.75. *Eggs* .77 × .59, always immaculate (?). *Hab.* Western United States, eastward across Great Plains, north to the Saskatchewan, and south into Mexico.

457. **S. saya** (BONAP.). **Say's Phœbe.**

GENUS **CONTOPUS** CABANIS. (Page 327, pl. XCIV., figs. 1, 2.)

Species.

COMMON CHARACTERS.—Above plain grayish brown or olive-grayish, usually darker on top of head, lighter on rump; wings and tail dusky, the wing-coverts with more or less distinct paler (usually dull grayish) tips, the secondaries edged with the same (these edgings broader and more whitish on tertials); lower parts paler than upper, the throat and belly usually whitish or pale yellowish; upper mandible black, lower light-colored, except at tip; feet blackish. *Young:* Similar to adult, but wing-coverts narrowly tipped with buffy, ochraceous, or light rusty. *Nest* on trees (usually on a stout horizontal branch), very compact, saucer-shaped. *Eggs* 2–4, pale cream-color, handsomely wreathed round larger end with spots of rich brown and lilac-gray or lavender.

*a*¹. Tarsus shorter than middle toe, with claw; primaries exceeding secondaries by two and a half times the length of the tarsus; wing exceeding tail by about half the length of the latter; first quill much longer than fourth, often longer than third; a very conspicuous white cottony patch on each side of rump; median lower parts white, or very pale yellowish (scarcely interrupted on breast), the lateral portions deep grayish brown, or brownish gray, in strong contrast. (Subgenus *Nuttallornis* Ridgw.[1])

Adult: Above brownish slate, some of the feathers usually with darker shaft-streaks; wings and tail dusky blackish, the wing-coverts tipped with brownish gray and tertials edged with whitish; a conspicuous tuft of white cottony feathers on each side of rump (usually concealed by wings); middle line of body beneath, from chin to crissum, white, the lateral portions brownish gray (usually with darker shaft-streaks), this sometimes extending across the chest, thus interrupting the white. *Young:* Similar to adult, but tips to wing-coverts (narrowly) dull buffy or fulvous. Length 7.10–7.90, wing 3.90–4.50, tail 2.80–3.50, exposed culmen .58–.70, tarsus .55–.60. *Eggs* .85 × .63, creamy buff, spotted, usually in more or less of a distinct ring round larger end, with deep rusty brown or chestnut and purplish gray. *Hab.* Higher mountain districts of United States, and coniferous forests of lowlands from northern border (New England to Michigan, etc.) northward, and south through higher mountains to Colombia.

459. **C. borealis** (Swains.). **Olive-sided Flycatcher.**

*a*². Tarsus longer than middle toe, with claw; primaries exceeding secondaries by less than twice the length of the tarsus; wing exceeding tail by less than one-fourth the length of the latter; first quill much shorter than fourth, sometimes shorter than fifth; no conspicuous white cottony tuft on side of rump; median lower parts not abruptly lighter than lateral portions. (Subgenus *Contopus* Cabanis.)

*b*¹. Wing more than 3.75.

Above plain grayish brown, tinged with olive, the wings without very distinct lighter markings; beneath plain light olive grayish, the chin whitish, the belly and under tail-coverts pale dull yellowish; length 7.70–8.00, wing 3.80–4.45, tail 3.60–3.90. *Hab.* Highlands of Guatemala and Mexico, north to southern Arizona.

460. **C. pertinax** Cab. **Coues's Flycatcher.**

*b*². Wing less than 3.75.

*c*¹. Belly and under tail-coverts white or pale sulphur-yellowish; under wing-coverts dull light olive-grayish, sometimes tinged with yellowish.

*d*¹. Exposed culmen much less than twice the width of bill at nostrils.

*e*¹. Second quill decidedly longer than third, and fourth quill much longer than fifth; wing 3.00, or more (usually more than 3.15).

*f*¹. Lores dull grayish, not distinctly or abruptly different from color of forehead and ear-coverts; throat not pure white.

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[1] New subgenus; more properly a distinct genus, so numerous and positive are the differences from all the species of *Contopus* proper.

*g*¹. Lighter and more olivaceous above, the median lower parts more distinctly whitish, or less extensively interrupted with olive-grayish on breast; wings and tail shorter; length 5.90-6.50, wing 3.00–3.45 (3.27), tail 2.50–2.90 (2.71), exposed culmen .43–.52 (.48), width of bill at base .24–.30 (.28), tarsus .48–.53 (.51). *Nest* a very beautiful saucer-shaped structure covered exteriorly with green and gray lichens, built usually upon a thick horizontal branch. *Eggs* .72 × .54, pale creamy buff or creamy white, spotted, usually in ring round larger end, with rich madder-brown and lilac-gray. *Hab.* Eastern North America, north to Canada, etc., west to edge of Great Plains; south, in winter, to eastern Mexico and Guatemala.

461. **C. virens** (Linn.). **Wood Pewee.**

*g*². Darker and less olivaceous above, the median lower parts less distinctly whitish, or more extensively interrupted with olive-grayish across breast; wings and tail longer; length 6.20–6.75, wing 3.15–3.55, (3.34), tail 2.50–2.95 (2.74), exposed culmen .44–.51 (.48), width of bill at base .27–.32 (.29), tarsus .49–.56 (.52). *Nest* composed chiefly of plant-fibres (sometimes, though rarely, ornamented with lichens), often built in forks of branches. *Eggs* .71 × .54, colored like those of *C. virens*. *Hab.* Western North America, east to Great Plains, north to British Columbia and interior of British America, south, in winter, through Mexico and Central America to Costa Rica.. 462. **C. richardsonii** (Swains.). **Western Wood Pewee.** (48.)

*f*². Lores whitish, in strong contrast with color of forehead and ear-coverts; throat pure white; otherwise very similar in color to *C. virens*, but bill much longer, broader, and more flattened; length (skin) 5.60, wing 3.20, tail 2.60, exposed culmen .55, width of bill at base .35, tarsus .50. *Hab.* Yucatan.

C. albicollis Lawr. **White-throated Wood Pewee.**[1]

*e*². Second quill not conspicuously (if any) longer than third, and fourth not conspicuously longer than fifth; wing not more than 3.05 (usually less than 3.00).

Above dull olive, decidedly darker on top of head, lighter on rump; wings and tail dusky, the former varied by dull olive-grayish tips to wing-coverts and paler (sometimes nearly white) edges to tertials; chest and sides of breast olive grayish, the sides and flanks much tinged with same; chin and throat whitish, sometimes tinged with sulphur-yellow; belly pale sulphur-yellow; under wing-coverts dull buffy, tinged or mixed with olive-grayish; length (skins) 5.30–5.50, wing 2.80–3.05, tail 2.60–2.75, exposed culmen .47–.50, tarsus .50–.55. *Hab.* Yucatan (including Cozumel) and southern Mexico (Cordova, etc.).

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[1] *Contopus albicollis* Lawr., Ann. Lyc. N. Y. Ac. Sci. iii. No. 5, Jan. 5, 1835, 156.

C. brachytarsus Scl. **Schott's Wood Pewee.**[1]

d^2. Exposed culmen about twice as long as width of bill at nostrils.

Colors much as in *C. schottii*, but grayer; length (skins) 5.25–5.70, wing 2.65–2.90, tail 2.40–2.70, exposed culmen .55–.60, width of bill at nostrils .25–.30, tarsus .60–.65. *Hab.* Bahamas.

C. bahamensis Bryant. **Bahaman Wood Pewee.**[2]

c^2. Belly, under tail-coverts, and under wing-coverts light ochraceous.

Otherwise in color much like *C. brachytarsus*, but bill shaped as in *C. bahamensis;* length (skins) 5.60–6.00, wing 2.75–2.80, tail 2.70–2.80. *Hab.* Cuba.

C. caribaeus (D'Orb.). **Cuban Wood Pewee.**[3]

Genus **EMPIDONAX** Cabanis. (Page 327, pl. XCIV., fig. 4.)

Species.

Common Characters.—Above plain brownish, grayish, olive, or olive-greenish, the wings with two lighter bands (across tips of greater and middle coverts), the secondaries edged with the same color as the wing-bands, except toward base, there being always a more or less distinct dusky bar behind tips of greater coverts; lower parts whitish, yellowish, or buffy, shaded with grayish, olive, or ochraceous across chest; upper mandible black, or dark brown, lower mandible pale-colored; legs and feet black.

a^1. Lower parts whitish or sulphur-yellowish, shaded, more or less, across breast with grayish or olivaceous.

b^1. Width of bill at nostrils decidedly greater than half the length of the exposed culmen.

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[1] *Empidonax brachytarsus* Scl., Ibis, 1859, 441. *Contopus brachytarsus* Scl., Cat. Am. B. 1862, 231. *Contopus schottii* Lawr., Ann. Lyc. N. Y. ix. 1869, 202. (Types of both compared, also additional specimens of *C. schottii.*)

[2] *Empidonax bahamensis* Bryant, Proc. Bost. Soc. N. H. vii. 1859, 109. *Contopus bahamensis* Cory, Bds. Bahama Is. 1880, 101.

[3] *Muscipeta carbaea* D'Orb, La Sagra's Cuba, 1839, 77. *Contopus caribæus* B. B. & R. Hist. N. Am. B. ii. 1874, 351.

c^1. Upper parts umber-brown, the top of head sometimes much darker (sooty).

Above dull brown, darker on top of head, the wing-bands varying from dull light brownish buff to tawny; chin and throat white; rest of lower parts pale smoky buff, shaded with smoky brown across breast (whole lower parts dull whitish in much worn plumage); under wing-coverts and thighs deep buff or ochraceous; wing 2.35–2.40 (2.37), tail 2.15–2.32 (2.24), culmen .60–.67 (.64), bill from nostril .32–.35 (.33), width at base .30, tarsus .67–.68 (.67). *Hab.* Southeastern Mexico (Vera Cruz) to highlands of Guatemala.

E. albigularis Scl. **White-throated Flycatcher.**[1]

c^2. Upper parts olive, olive-greenish, or olive-grayish.

d^1. Lower parts without white (usually yellowish).

e^1. Under wing-coverts pale buff, deepening into ochraceous on edge of wing. (Length 5.50–6.00.)

Adult: Above dull grayish olive (more brownish in winter), the wing-bands dull light buffy grayish (more buffy in winter); lower parts pale dull yellowish, inclining to sulphur-yellow on belly and under tail-coverts, and faintly shaded with dull grayish brown across breast. *Young:* Similar, but browner above, with wing-bands ochraceous, or rusty buff, the sulphur-yellow of belly, etc., replaced by dull white. *Male:* Wing 2.50–2.90 (2.65), tail 2.35–2.60 (2.43), culmen .57–.63 (.61), bill from nostril .29–.33 (.31), width at base .25–.28 (.27), tarsus .64–.69 (.68). *Female:* Wing 2.30–2.60 (2.44), tail 2.20–2.45 (2.32). *Nests* in clefts of old stumps or logs, or similar situations, bulky, composed of mosses, etc. *Eggs* .66 × .52, buffy white or pale buff, speckled, chiefly round larger end, with rusty brown, or cinnamon. *Hab.* Western United States, north to Sitka; south, in winter, to western Mexico.

(49.) 464. **E. difficilis** Baird. **Western Flycatcher.**[2]

e^2. Under wing-coverts yellowish white, or pale sulphur-yellow.

f^1. Wing-bands not darker (usually paler) than lower parts. (Length 5.10–5.80.)

Adult: Above dull olive-green, the wing-bands pale olive-yellowish; beneath pale dull sulphur-yellow, shaded with olive across breast. *Young:* Similar, but duller, with wing-bands buffy or ochraceous. *Male:* Wing 2.55–2.75 (2.64), tail 2.10–2.30 (2.18), culmen .48–.59 (.54), bill from nostril .30–.32 (.31), width at base .25–.28 (.26), tarsus .64–.68 (.66). *Female:* Wing 2.40–2.50 (2.45), tail 2.00–2.25 (2.11). *Nest* embedded in mossy bank, stump, or log, composed of green moss, dry leaves, fine sticks, etc., lined with fine black rootlets, dried grass-blades, etc.; external diameter about 4.00–4.50, depth about 2.25–4.00; cavity about 1.25–1.50 deep by 2.00 across. *Eggs* usually 4, .67 × .51, colored like those of *E. difficilis.* *Hab.* Eastern North America, breeding from northern United States northward; south, in winter, through eastern Mexico and Central America to Panama.............. 463. **E. flaviventris** Baird. **Yellow-bellied Flycatcher.**

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[1] *Empidonax albigularis* Scl., Ibis, 1859, 122. *Empidonax axillaris* Ridgw., in Hist. Am. B. ii. 1874, 363.

[2] Called "Baird's Flycatcher" in the A. O. U. Check List, but this name belongs properly to *E. bairdii* Scl.

*f*². Wing-bands darker than lower parts.

*g*¹. Above dull olive.

Adult: Above dull olive, the wing-bands dull light olive, sometimes inclining to russet; lower parts pale olive-yellowish, more decidedly olivaceous on breast; edge of wing dull ochraceous or fulvous; wing 2.60–2.80 (2.72), tail 2.40–2.55 (2.49), culmen .58–.60 (.59), bill from nostril .32–.33 (.32), width at base .25, tarsus .65–.70 (.68). *Hab.* Southern and eastern Mexico (Oaxaca, Cordoba, Mirador, etc.)...... **E. bairdii** Scl. **Baird's Flycatcher.**[1]

*g*². Above bright olive-green. *Adult:* Above bright olive-green, the wing-bands similar, but paler, sometimes inclining to ochraceous; lower parts greenish sulphur-yellow, distinctly shaded across breast and along sides with olive-green; edge of wing clear sulphur-yellow; wing 2.50–2.90 (2.75), tail 2.15–2.65 (2.44), culmen .60–.63 (.61), bill from nostril .32–.35 (.34), width at base .28–.30 (.29), tarsus .68–.72 (.70). *Hab.* Highlands of Guatemala. **E. salvini** Ridgw. **Salvin's Flycatcher.**[2]

*d*². Lower parts partly white.

*e*². First quill longer than seventh.

*f*¹. First quill usually equal to or longer than fifth; color uniform olive-green or greenish gray above. (Length 5.50–5.90.)

Adult: Above varying from greenish gray to olive-green, or even (in some winter specimens) almost

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[1] *Empidonax bairdii* Scl., P. Z. S. 1858, 301.

[2] *Empidonax salvini* Ridgw., Ibis, Oct. 1886, 459.

russet-olive, the top of the head similar to the back; wing-bands buff or buffy whitish; lower parts white, more or less strongly tinged with sulphur-yellow laterally and posteriorly, and (usually very faintly) shaded across breast with olive or grayish. *Young:* Similar to adult, but with wing-bands deeper ochraceous, and feathers of upper parts (especially crown and rump) narrowly tipped with paler, producing an inconspicuous mottling. *Male:* Wing 2.75–3.10 (2.83), tail 2.30–2.70 (2.49), culmen .62–.69 (.66), bill from nostril .32–.39 (.35), width at base .28–.30 (.30), tarsus .59–.67 (.62). *Female:* Wing 2.55–2.70 (2.65), tail 2.25–2.35 (2.32). *Nest* a very thin, flat structure secured between forks near the extremity of a (usually depending) branch, composed of fine rootlets, tree-catkins, etc. *Eggs* 2–4, .72 × .53, pale creamy buff or creamy white, sparsely speckled or spotted, chiefly on larger end, with deep rusty brown or madder-brown. *Hab.* Eastern United States; south, in winter, through eastern Mexico and Central America to Ecuador; Cuba.................... 465. **E. virescens** (Vieill.).
Green-crested Flycatcher.[1]

f^2. First quill usually shorter than fifth; color olive or grayish brown above—never distinctly greenish.

g^1. Tail even, or very slightly rounded; wing averaging more than 2.60. (Length 5.50–6.50.)

h^1. *Adult:* Above olive, usually decidedly grayer on head; wing-bands varying from dull brownish gray, or grayish brown, to nearly white; lower parts white, tinged more or less with sulphur-yellow posteriorly, and shaded with olive-grayish on sides of breast; under wing-coverts very pale buffy yellow. *Young:* Similar, but rather browner above and more distinctly tinged with yellow beneath, the wing-bands deep buff, or ochraceous. *Male:* Length about 5.80–6.25, wing 2.70–2.85 (2.75), tail 2.35–2.60 (2.51), culmen .64–.73 (.69), bill from nostril .35–.40 (.38), width at base .27–.31 (.29), tarsus .65–.72 (.68). *Female:* Length about 5.55–6.00, wing 2.55–2.65 (2.60), tail 2.20–2.50 (2.38), other measurements about as in male. *Nest* deep cup-shaped, bulky, usually built between forks of an upright twig or branch, in bushes, composed of plant-down, straws, etc. *Eggs* 2–4, .70 × .53, similar in color to those of *E. acadicus*, but averaging paler, both in ground-color and in markings. *Hab.* Western North America, north to Sitka and Fort Simpson; south, in winter, into Mexico.

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[1] *Cf.* Brewster, The Auk, xii. April, 1895, pp. 157–159.

466. **E. traillii** (Aud.). **Traill's Flycatcher.**[1]

*h*². Similar to *E. pusillus*, but averaging more decidedly olivaceous above and more distinctly tinged with yellow beneath, the bill shorter and broader, and tarsus shorter. *Male:* Wing 2.60–3.00 (2.81), tail 2.40–2.60 (2.48), culmen .60–.64 (.62), bill from nostril .32–.37 (.34), width at base .29–.30 (.30), tarsus .64–.67 (.66). *Female:* Wing 2.50–2.65 (2.58), tail 2.25–2.35 (2.30). *Nest* and *eggs* as in *E. pusillus*, the latter averaging .73 × .53. *Hab.* Eastern North America; south, in winter, through Middle America to northern South America.

466*a*. **E. traillii alnorum** Brewst. **Alder Flycatcher.**[2]

*g*². Tail slightly, but decidedly, emarginated; wing averaging less than 2.60. (Length 4.90–5.50.)

Hardly distinguishable in color from *E. pusillus* and *E. traillii*, but wing-bands usually whiter. *Male:* Wing 2.30–2.60 (2.49), tail 2.10–2.40 (2.30), culmen .53–.59 (.56), bill from nostril .27–.31 (.29), width at base .23–.27 (.25), tarsus .59–.68 (.65). *Female:* Wing 2.20–2.40 (2.33), tail 2.10–2.25 (2.18). *Nest* very compactly felted, cup-shaped, composed chiefly of grayish plant-fibres, placed in fork of upright branches of bushes or small trees. *Eggs* 2–4, .64 × .50, plain buffy white. *Hab.* Eastern North America, breeding from northern United States northward; south, in winter, through Middle America, to Panama.

467. **E. minimus** Baird. **Least Flycatcher.**

*b*². Width of bill at nostrils less than half the exposed culmen.

*c*¹. Outer web of outer tail-feather not abruptly paler than inner web; culmen .55, or less; tarsus less than .70. (Length 5.25–5.75.)

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[1] *Cf.* Brewster, The Auk, xii. April, 1895, pp. 159–161.

[2] Ibid., pp. 161–163.

Adult: Above olive, usually more grayish anteriorly, especially on hind-neck; wing-bands dull light grayish, more or less tinged with olive; lower parts varying from dull grayish white, faintly tinged with yellowish on flanks, etc., to decided olive-yellowish, the breast always strongly shaded with olive or olive-grayish, and the throat never distinctly whitish (usually distinctly grayish). *Male:* Length about 5.50–5.75, wing 2.60–2.80 (2.72), tail 2.30–2.50 (2.38), culmen .53–.59 (.56), bill from nostril .26–.29 (.27), width at base .22–.24 (.23), tarsus .60–.68 (.63). *Female:* Length about 5.25, wing 2.45–2.75 (2.61), tail 2.15–2.40 (2.25). *Eggs* .66 × .51, usually slightly dotted. *Hab.* Western North America, north to Lesser Slave Lake; south, in winter, to southern Mexico.

468. **E. hammondi** (Xantus). **Hammond's Flycatcher.**

c^2. Outer web of outer tail-feather abruptly paler than inner web (usually distinctly dull whitish); culmen .58, or more; tarsus usually more than .70. (Length 5.75–6.40.)

d^1. Colors otherwise much as in *E. hammondi*, but averaging grayer, with paler (often distinctly whitish) throat. *Male:* Wing 2.70–2.95 (2.83), tail 2.55–2.80 (2.67), culmen .62–.69 (.65), bill from nostril .32–.38 (.36), width at base .24–.27 (.26), tarsus .71–.77 (.74). *Female:* Wing 2.55–2.75 (2.64), tail 2.50–2.65 (2.52). *Nest* usually in aspen bushes, similar in composition, etc., to that of *E. minimus*. *Eggs* .68 × .52, plain buffy white. *Hab.* Western United States, south to southern Mexico, east to Rocky Mountains.

(50.) 469. **E. wrightii** Baird. **Wright's Flycatcher.**

d^2. Deep brownish olive above, the wing-bands varying from olive to pale olive-grayish; lower parts dull yellow, shaded across breast with olive-brown; wing 2.92–3.00, tail 2.65–2.75, culmen .60, bill from nostril .30, width at base .22–.25, tarsus .68. *Hab.* Southern Mexico (Orizaba; city of Mexico).

E. fulvipectus Lawr. **Narrow-billed Flycatcher**[1]

a^2. Lower parts deep buff, deepening into ochraceous on breast and sides.

b^1. Upper parts deep hair-brown, tinged with umber.

c^1. Lower parts soft pinkish buff, inclining to isabella-color on breast, paler on throat and belly, the under tail-coverts nearly white; wing 2.70, tail 2.45, culmen .52, bill from nostril .28, width at base .21, tarsus .60. *Hab.* Eastern Mexico and southern Texas (?).

470. **E. fulvifrons** (Giraud). **Fulvous Flycatcher.**

c^2. Lower parts bright ochraceous-buff, inclining to deep ochraceous on breast, and pale buffy yellow on belly, the throat buffy whitish and lower tail-coverts yellowish white; wing 2.35–2.55 (average 2.43), tail 1.90–2.15 (2.05), culmen .48–.50 (.49), bill from nostril .25–.27 (.26), width at base .20, tarsus .52–.58 (.56). *Hab.* Southern Mexico.

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[1] *Empidonax fulvipectus* Lawr., Ann. Lyc. N. Y. x. Feb. 1871, 11.

E. fulvifrons rubicundus (Cab. & Hein.). **Ruddy Flycatcher.**[1]

b^2. Upper parts dull grayish brown.

Lower parts pale buff, brightening into ochraceous-buff on breast and anterior portion of sides. *Young:* Wing-bands buff (instead of light grayish brown or dull grayish white), the lower parts much paler and duller buff, without ochraceous tinge. Length about 4.75–5.10, wing 2.20–2.45 (2.34), tail 1.95–2.14 (2.06), culmen .50–.55 (.52), bill from nostril .25–.27 (.26), width at base .20–.22 (.21), tarsus .51–.60. *Hab.* Southern Arizona and New Mexico, south into western Mexico.

470*a*. **E. fulvifrons pygmæus** (Coues). **Buff-breasted Flycatcher.**

Genus PYROCEPHALUS Gould. (Page 327, pl. XCII., fig. 2.)

Species.

Adult male: Whole top of head and entire lower parts bright scarlet; ear-coverts and upper parts (except top of head) brownish gray, the wings and tail darker (sometimes nearly black). *Adult female:* Above brownish gray, including crown; lower parts whitish, more or less tinged with pale red or salmon-color posteriorly, the breast more or less streaked with grayish. *Immature male:* Similar to adult female, but with red feathers intermixed on crown and anterior lower parts. *Young:* Above grayish, the feathers bordered with whitish; beneath whitish, without any reddish tinge posteriorly. Length about 5.50–6.25, wing 3.20–3.40, tail 2.60–2.80. *Nest* shallow and very compact, somewhat like that of *Contopus virens.* *Eggs* 2–3, .69 × .51, pale olive-buff or dull buffy (rarely nearly white), boldly and heavily spotted, chiefly in wreath round larger end, or near middle, with dark vandyke-brown or brownish black and purplish gray. *Hab.* Mexico and Guatemala, and north to southern border of United States (southern Texas to Arizona) .... 471. **P. rubineus mexicanus** (Scl.). **Vermilion Flycatcher.**[2]

Genus ORNITHION Hartlaub. (Page 327, pl. XCV., fig. 4.)

Species.

Common Characters.—Above plain brownish gray, or olive-gray; wings more dusky, the coverts tipped with light brownish gray or brownish, the tertials, secondaries, and quills edged, more or less distinctly, with the same, the secondaries, however, with the basal fourth, or more, of exposed portion uniform dusky; lower parts dull grayish white, or yellowish white, tinged with grayish laterally, especially on sides of breast; sides of head light grayish, without distinct markings, though lores and orbits are more or less distinctly paler. *Young* with wing-bands ochraceous or pale rusty, and lower parts more buffy whitish.

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[1] *Empidonax rubicundus* Cab. & Hein., Mus. Hein. ii. Sept. 1859, 70, foot-note. *Empidonax fulvifrons rubicundus* Ridgw., Pr. Biol. Soc. Wash. ii. 1885, 109.

[2] A rare melanistic plumage is uniform sepia-brown, tinged in male with wine-purple on crown and lower parts. This condition is comparatively frequent in the common South American form, or true *P. rubineus* (Bodd).

a^1. Smaller and browner, with lower parts more tinged with sulphur-yellowish, the bill smaller and more slender; length about 4.50, wing 2.10–2.15 (2.12), tail 1.70–1.95 (1.84), culmen .39–.40 (.40), exposed culmen .28–.30 (.30), depth of bill at base .13–.14, tarsus .55–.60 (.57). *Hab.* Central America and eastern Mexico, north to lower Rio Grande Valley in Texas.
472. **O. imberbe** (Scl.). **Beardless Flycatcher.**

a^2. Larger and grayer, with little if any sulphur-yellow tinge to grayish white lower parts, the bill larger and thicker; length 4.30–4.80 (4.50), wing 2.04–2.28 (2.18), tail 1.78–2.04 (1.89), culmen .40–.42 (.41), exposed culmen .30–.35 (.32), depth of bill at base .14–.15, tarsus .52–.58 (.56). *Hab.* Western Mexico, north to southern Arizona, south to Mazatlan.
472*a*. **O. imberbe ridgwayi** Brewst. **Ridgway's Flycatcher.**

FAMILY **ALAUDIDÆ**.—THE LARKS. (Page 321.)

Genera.

a^1. A spurious primary; tail deeply emarginate; crown with a blunt erectile crest of soft, normal feathers; plumage of adult mainly dull brownish, much streaked above and below.. **Alauda.** (Page 346.)

a^2. No spurious primary; tail even or slightly rounded; crown without crest, but on each side of occiput an erectile, narrow, horn-like tuft of lengthened black feathers; plumage of adult with plain brownish or vinaceous tints prevailing above, the lower parts mainly plain white, the head and chest with bold black markings (less conspicuous in females)... **Otocoris.** (Page 347.)

GENUS **ALAUDA** LINNÆUS. (Page 346, pl. XCVI., fig. 1.)

Species.

Common Characters.—*Adults:* Above light brownish, everywhere streaked with black, most broadly on back; wings dusky, the feathers with pale brownish edges and borders; lower parts and superciliary stripe whitish, the chest pale brownish or tawny buff, distinctly streaked with brownish black; sides and flanks also tinged with pale tawny, and usually more or less distinctly, but narrowly, streaked with deeper brownish or dusky; ear-coverts light brownish or tawny, becoming darker (sometimes blackish) along upper margin; outer tail-feathers white, with more or less of dusky along edge of inner web, especially toward base. *In winter*, the plumage generally more tawny, and feathers of crown, back, etc., with more or less distinct whitish terminal margins. *Young:* More tawny than winter adults, with more conspicuous white terminal margins to feathers of upper parts, which instead of having a mesial blackish streak are marked with a subterminal spot of dark brown; tertials light tawny brownish, widely bordered with pale dull buffy, surrounding a narrow submargin of dark brown; chest ochraceous-buffy, indistinctly streaked or spotted with bright tawny brownish. *Nest* on ground in meadows or open grassy places. *Eggs* 3–6, dull buffy whitish, pale grayish brown, etc., thickly speckled or sprinkled with umber-brown, the latter color sometimes nearly uniform.

a^1. Duller or grayer in color, the upper parts, chest, etc., with tawny tinge less pronounced, black spots or streaks on back averaging narrower, and bill shorter; length about 7.00–7.75, wing 4.35–4.60, tail 2.90–3.10, exposed culmen .45–.50, tarsus .90–1.00. *Eggs* .88 × .66. *Hab.* Europe and portions of Asia and Africa; accidental in Greenland and Bermudas, and introduced, though not successfully naturalized, in eastern United States (Long Island, near Cincinnati, etc.)........................... 473. **A. arvensis** Linn. **Skylark.**

a^2. Brighter or more tawny in color, black spots on back averaging larger, and bill longer; length 6.80–7.80 (7.30), wing 4.25–4.70, tail 2.85–3.00, exposed culmen .43–.52, tarsus .95–1.10. *Hab.* Commander Islands, Kamtschatka, Kurils, and northern Japan; western Aleutians (?).
A. blakistoni Stejn. **Kamtschatkan Skylark.**[1]

Genus **OTOCORIS** Bonaparte. (Page 346, pl. XCVI., fig. 2.)

Species.

Common Characters.—*Adult males in spring and summer:* Above varying from vinaceous-gray to tawny cinnamon, the back and scapulars grayer or browner, and more or less distinctly streaked with darker; a broad patch covering fore-part and sides of crown, lores, patch beneath eye (covering also anterior and lower portion of ear-coverts), and patch across chest, uniform black; bar or band across forehead and extending backward as a broad superciliary stripe, middle portion of ear-coverts, malar region, chin, throat, and sides of neck, varying from pure white to deep primrose-yellow, the hinder portion of ear-coverts more or less distinctly grayish; sides (especially of breast) vinaceous or cinnamon, like nape, etc., the flanks usually somewhat streaked; rest of lower parts usually white, but sometimes (in *O. giraudi* and *O. strigata*) partly or even wholly pale yellow; wings (except lesser and middle coverts) grayish brown, the feathers edged with paler; tail (except middle feathers) black, the outer web of exterior feather chiefly white, and that of next feather edged, toward tip, with same. *Adult males in fall and winter:* Essentially like the foregoing, but black markings of head more or less obscured by light-colored tips to feathers, the plumage generally softer and colors more blended, the chest often streaked, clouded, or washed with grayish. *Adult females:* Similar to males, but decidedly smaller, with black head-markings much less distinct (that on top of head never well defined or continuous), the bold pattern of these markings as seen in the male seldom more than merely indicated; vinaceous or cinnamon tints of males much less pronounced (sometimes almost wholly wanting), and plumage generally more extensively streaked. (Seasonal differences as in males.)

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[1] *Alauda blakistoni* Stejn., Proc. Biol. Soc. Wash. ii. Apr. 10, 1884, 98.

Young: Above mixed dusky and light brownish (in variable relative quantity), conspicuously speckled or dotted with white or pale buffy; wing-coverts conspicuously margined with pale dull buffy; lower parts whitish, the chest more or less tinged with pale brownish buff and speckled or clouded with dusky; no distinct head "pattern." *Nest* composed of fine dried grass-stems, etc., embedded in ground, under shelter of tussock of grass, a stone, etc. *Eggs* 3–5, pale olive, pale dull buffy, dull olive-whitish, etc., finely but usually densely speckled or sprinkled with olive-brown (rarely, pale cinnamon-buff, speckled with cinnamon-rusty).

a^1. Wing of male averaging more than 4.40, that of female averaging 4.12, or more.

b^1. Darker, the hind-neck, rump, etc., deeper vinaceous-cinnamon, the throat and superciliary stripe usually deep primrose-yellow. *Young* with sooty blackish prevailing on upper parts, the chest and sides distinctly tinged with brownish buff and speckled or mottled with dusky. *Male:* Length about 7.50–8.00, wing 4.20–4.60 (4.41), tail 2.70–3.10 (2.98). *Female:* Wing 3.95–4.55 (4.19), tail 2.50–3.10 (2.78). *Hab.* Northeastern North America (region about Hudson's Bay, including Labrador), Greenland, and northern Europe; in winter, south to the Carolinas, Illinois, etc.

474. **O. alpestris** (Linn.). **Horned Lark.**

b^2. Paler, the hind-neck, rump, etc., lighter, more ashy, or lilaceous, vinaceous, the throat usually white or but faintly yellowish, the superciliary stripe pure white. (*Young* unknown.) *Male:* Length about 7.50–8.00, wing 4.30–4.65 (4.43), tail 2.85–3.20 (3.10). *Female:* Wing 4.00–4.20 (4.12), tail 2.60–2.80 (2.73). *Eggs* .94 × .66. *Hab.* Northwestern North America, breeding from Alaska southward, east of Rocky Mountains, nearly to United States boundary; in winter, south over more northern Great Plains and Great Basin of United States, as far as Kansas, Utah, and Nevada.

474*a*. **O. alpestris leucolæma** (Coues). **Pallid Horned Lark.**

a^2. Wing averaging less than 4.20 in males, less than 4.00 in females.

b^1. Wing averaging more than 4.10 in males, more than 3.80 in females.

c^1. Dark-colored, as in *O. alpestris* (but rather paler), with young very dark, as in that form. *Male:* Length about 7.00–7.50, wing 4.00–4.30 (4.13), tail 2.90–3.10 (2.99). *Female:* Length 6.75–6.85, wing 3.70–4.00 (3.84), tail 2.60–2.90 (2.73). *Eggs* .85 × .62. *Hab.* Upper Mississippi Valley and region of the Great Lakes (especially within United States), east, locally, to New York; south, in winter, to Virginia and northeastern Texas.

474*b*. **O. alpestris praticola** (Hensh.). **Prairie Horned Lark.**

c^2. Paler colored, like *O. leucolæma*, but with throat usually distinctly (sometimes strongly) primrose-yellow. *Young* very pale-colored, with prevailing color of upper parts light grayish buff, or pale buffy grayish. *Male:* Length 7.00–7.50, wing 4.05–4.30 (4.16), tail 2.75–3.15 (2.99). *Female:* Length about 6.50–6.75, wing 3.70–4.00 (3.84), tail 2.50–2.80 (2.68). *Eggs* .86 × .62. *Hab.* Great Plains and Rocky

Mountain district (including Great Basin) of United States, south to western Texas, New Mexico, and northern Arizona (also northern Mexico in winter).

474*c*. **O. alpestris arenicola** Hensh. **Desert Horned Lark.**

*b*². Wing averaging less than 4.00 in adult males, less than 3.80 in females.

*c*¹. Back not broadly or conspicuously streaked with dusky, and median lower parts never wholly pale yellowish.

*d*¹. General aspect of upper parts grayish (decidedly so in female); male with breast, as well as throat, superciliary stripe, etc., usually pale yellow, the breast usually flecked with grayish brown in both sexes. *Male:* Length about 6.50–6.75, wing 3.80–3.85 (3.83), tail 2.60. *Female:* Length about 5.80–6.00, wing about 3.50, tail 2.35. *Eggs* .86 × 61. *Hab.* Eastern and southeastern Texas.

474*d*. **O. alpestris giraudi** Hensh. **Texan Horned Lark.**

*d*². General aspect of upper parts decidedly ruddy (more brownish in female); breast usually pure white, without markings, in both sexes.

*e*¹. Larger and less brightly colored, the male with hind-neck, rump, etc., vinaceous-cinnamon. *Male:* Length about 6.75–7.25, wing 3.80–4.15 (3.99), tail 2.80–3.00 (2.91). *Female:* Length about 6.50–7.00, wing 3.75–3.80 (3.78), tail 2.70–2.80 (2.75). *Hab.* Table-lands of Mexico, north to southern New Mexico and Arizona, and westward across southern California to the coast.......... 474*e*. **O. alpestris chrysolæma** (Wagl.). **Mexican Horned Lark.** (51.)

*e*². Smaller and brighter colored, the male with hind-neck, rump, etc., rich tawny cinnamon. *Male:* Length about 6.50–7.00, wing 3.70–4.10 (3.88), tail 2.60–2.90 (2.74). *Female:* Length about 6.00–6.50, wing 3.50–3.70 (3.61), tail 2.35–2.65 (2.49). *Eggs* .80 × .57. *Hab.* Interior valleys of California.

(52.) 474*f*. **O. alpestris rubea** Hensh. **Ruddy Horned Lark.**

*c*². Back broadly and conspicuously streaked or striped with dusky, and median lower parts usually partly, sometimes wholly, pale yellow.

Otherwise much like *O. rubea*, but dull olive-brown or grayish brown ground-color of back and scapulars much more strongly contrasted with vinaceous-cinnamon of hind-neck, rump, etc., the female with upper parts more olivaceous and much more sharply and conspicuously streaked. *Male:* Length about 6.75–7.25, wing 3.70–4.10 (3.94), tail 2.70–3 05 (2.88). *Female:* Length about 6.25–6.50, wing 3.60–3.85 (3.69), tail 2 50–2.80 (2.62). *Hab.* Coast district of Oregon, Washington Territory, and British Columbia; south, in winter, to portions of California and western Nevada.......... 474*g*. **O. alpestris strigata** Hensh. **Streaked Horned Lark.** (53.)

FAMILY **CORVIDÆ**.—THE CROWS, JAYS, MAGPIES, ETC. (Page 322.)

Genera.

a^1. Tail equal to or longer than wing; wing short, rounded, the primaries exceeding secondaries by much less than length of tarsus, the fourth, fifth, or sixth quills longest. (Subfamily *Garrulinæ.*)

  b^1. Tail much longer than wing, graduated for half its length or more, the feathers becoming narrower toward tips.

    c^1. Nostrils covered by bristles; head not crested; orbits partly naked; wings and tail metallic bluish and greenish, the latter without white tips; scapulars pure white.................... **Pica.** (Page 351.)

    c^2. Nostrils exposed; head conspicuously crested; orbits entirely feathered; wings and tail plain cobalt-blue, the latter with broad white tips; scapulars blue, like back, etc............................... *Calocitta.*[1]

  b^2. Tail not much longer than wing, not graduated for more than about one-third its length (usually much less), the feathers not becoming narrower toward tips.

    c^1. Head, neck, and chest uniform deep black; back glossy bright blue, in abrupt contrast with the black................................ *Cissolopha.*[2]

    c^2. Head, neck, and chest not uniform deep black, or else top of head conspicuously crested; back not bright blue, or else top of head same color.

      d^1. Nostrils exposed; large (wing more than 7.25, tail more than 7.50). (Color chiefly dull brownish.) **Psilorhinus.** (Page 352.)

      d^2. Nostrils covered; smaller (wing less than 7.00, tail less than 7.00).

        e^1. Color chiefly blue or green.

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[1] *Calocitta* GRAY, List Gen. B. 1841, 50. Type, *Pica formosa* SWAINS.

This genus contains two well-known species, one, *C. colliei* (VIG.), belonging to western Mexico (north to Mazatlan), the other, *C. formosa* (SWAINS.), inhabiting southern Mexico, and southward to Costa Rica. A third species probably exists in the wooded districts in the interior of Lower California. *C. colliei* is perhaps the finest of all Garruline birds, measuring two to two and a half feet in total length (of which the tail constitutes about two-thirds); the colors are bright and boldly contrasted, while the crown is ornamented by a very conspicuous recurved crest.

[2] *Cissolopha* BONAP., Consp. i. 1850, 380. Type, *Pica sanblasiana* LAFR.

This genus includes two very beautiful species which come close to our limits, both occurring in the state of Sinaloa, western Mexico. The type of the genus, *C. sanblasiana*, has the head, neck, upper back, and lower parts uniform deep black, changing to dull blue on under tail-coverts, the upper parts bright cobalt- or azure-blue, becoming ultramarine blue on the tail; on the forehead there is a slender, hair-like crest, and the nostrils are partly—sometimes wholly—exposed; bill and feet usually deep black, sometimes bright yellow; length about 12.00, wing 5.25–5.50, tail 6.00–6.50. *Hab.* Western Mexico, north at least to Mazatlan. *C. beecheii* (*Pica beecheii* VIG., Zool. Jour. iv. 1828, 353) is a larger and still finer species, of similar coloration, but with the blue of a rich smalt shade; it lacks the frontal crest and has the nostrils completely covered, and may possibly require generic or subgeneric separation from *Cissolopha;* length about 15.00–19.00, wing 7.00, tail 7.50–8.50. *Hab.* Western Mexico (vicinity of Mazatlan, and on Tres Marias).

*f*¹. Color chiefly blue.

*g*¹. Head with conspicuous crest.

Cyanocitta. (Page 353.)

*g*². Head without crest....... **Aphelocoma.** (Page 355.)

*f*². Color chiefly green, with outer tail-feathers yellow.

Xanthoura. (Page 358.)

*e*². Color dull slaty or grayish above, dull grayish or brownish beneath, the head partly white in adults. (*Young* wholly dusky.)............................... **Perisoreus.** (Page 358.)

*a*². Tail much shorter than wing; wing long and pointed, the primaries exceeding longest secondaries by more than the length of the tarsus, the third, fourth, and fifth quills longest. (Subfamily *Corvinæ.*)

*b*¹. Wing 9.00, or more; plumage entirely glossy black (in North American species); bill compressed, much higher than broad.

Corvus. (Page 360.)

*b*². Wing less than 9.00; plumage mainly grayish or blue; bill cylindrical, scarcely or not at all higher than broad.

*c*¹. Nostrils concealed by an antrorse tuft of feathers; color ash-gray, with black on wings and tail, the latter mainly white, and secondaries broadly tipped with white.................. **Picicorvus.** (Page 364.)

*c*². Nostrils wholly exposed; color uniform dull blue, brighter on head.

Cyanocephalus. (Page 364.)

GENUS **PICA** CUVIER. (Page 350, pl. XCVIII., fig. 2.)

Species.

COMMON CHARACTERS.—Wings metallic greenish blue, varied with greenish or violet (sometimes both), the inner webs of quills chiefly white; tail rich metallic green varied with bronze, purple, and violet near end; scapulars, belly, sides, and flanks pure white; other parts blackish. *Adult:* Head, neck, breast, back, tail-coverts, and thighs deep black, the top of the head more or less distinctly glossed with metallic greenish or bronzy. *Young:* Head, neck, etc., dull black, without metallic gloss on crown. *Nest* of coarse, often thorny, sticks, lined with finer twigs and rootlets, and protected by a loose canopy of coarse, often thorny, twigs, the entrance through the latter on one side. *Eggs* 3–10, pale olive-buffy, dull white, or very pale greenish, thickly speckled, clouded, sprinkled, or dashed with brown.

*a*¹. Bill deep black, and naked skin of orbital region blackish.

*b*¹. Feathers of throat without white beneath surface; wing 6.90–7.55 (7.24), tail 8.40–10.30 (9.36), exposed culmen 1.10–1.25 (1.21), tarsus 1.57–1.80 (1.68). *Hab.* Northern and central Europe.

P. pica (LINN.). **Magpie.**[1]

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[1] *Corvus pica* LINN., S. N. ed. 10, i. 1758, 106. *Pica pica* SHARPE, Cat. B. Brit. Mus. iii. 1877, 62.

*b*². Feathers of throat spotted with white beneath surface; averaging larger, the bill especially; iris with an outer ring of grayish blue; length (fresh) 17.40–21.75, wing 7.30–8.40 (7.93), tail 9.30–11.95 (10.65), exposed culmen 1.15–1.42 (1.26), tarsus 1.70–1.92 (1.82). *Eggs* 1.28 × .90. *Hab.* Western North America (except most of California), from New Mexico and Arizona to Alaska, east to eastern Colorado, Dakota, western Manitoba (casually to Michigan and northern Illinois?).

475. **P. pica hudsonica** (Sab.). **American Magpie.**

*a*². Bill and naked skin of orbital region bright yellow.

Otherwise like *P. hudsonica*, but averaging decidedly smaller; length about 16.00–18.00, wing 7.20–7.70 (7.38), tail 9.30–10.30 (9.68), exposed culmen 1.04–1.17 (1.11), tarsus 1.63–1.89 (1.82). *Eggs* 1.24 × .89. *Hab.* Middle California from west slope of Sierras to the coast.

476. **P. nuttalli** Aud. **Yellow-billed Magpie.**

Genus **PSILORHINUS** Rüppell.[1] (Page 350, pl. XCVII., fig. 2.)

Species.

Common Characters.—Above uniform brown, darker on head, and becoming grayish on tail; chin, throat, and chest uniform brown, the remaining lower parts varying from pale brown to white.

*a*¹. No white on tail.

Adult: Head, neck, and chest uniform dark brown, gradually changing into a lighter shade of the same on upper parts, and into still paler grayish brown, brownish gray, or isabella-color (rarely whitish) on lower parts; bill and feet varying from black to yellow. *Young:* Scarcely different from adult, except in texture of plumage. Length about 16.00–18.00, wing 8.00–8.50, tail 8.25–9.30. *Hab.* Eastern Mexico, north to the Rio Grande Valley, south to Tehuantepec.

P. morio (Wagl.). **Brown Jay.**[2]

*a*². Tail-feathers, except middle pair, broadly tipped with white.

*b*¹. A distinct malar patch of light bluish gray; belly and under tail-coverts whitish; length about 16.00–18.00, wing 7.60–8.40, tail 8.50–8.90. *Hab.* Eastern Mexico (Mirador) and coast of Honduras (Pearl Bay, Mosquito coast).

P. cyanogenys Gray. **Blue-cheeked Brown Jay.**[3]

*b*². No grayish blue malar patch; otherwise like *P. cyanogenys;* length about 15.00–16.00, wing 7.30–8.20, tail 7.60–8.80. *Hab.* Southern Mexico to Costa Rica.

P. mexicanus Rüpp. **White-tailed Brown Jay.**[4]

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[1] *Psilorhinus* Rüpp., Mus. Senckenb. 1837, 188. Type, *P. mexicanus* Rüpp.

[2] *Pica morio* Wagl., Isis, 1829, 751. *Psilorhinus morio* Gray, Gen. B. ii. 1849, 308.

[3] *Psilorhinus cyanogenys* Sharpe, Cat. B. Brit. Mus. iii. 1877, 140, pl. 9 (*ex* Gray, Hand-list, ii. p. 6, *descr. nulla*). Doubtless only a color phase or variation of *P. mexicanus.* (*Cf.* Stone, Pr. Ac. Nat. Sci. Philad. 1891, 94.)

[4] *Psilorhinus mexicanus* Rüpp., Mus. Senckenb. 1837, 189, pl. 11, fig. 2.

GENUS **CYANOCITTA** STRICKLAND. (Page 351, pl. C., fig. 1.)

Species.

COMMON CHARACTERS.—Upper parts mainly blue, the secondaries and tail (sometimes greater coverts also) barred with black; head black or varied with black; lower parts uniform blue, or whitish with a black collar across chest.

*a*¹. Lower parts whitish; greater wing-coverts, secondaries, and tail-feathers (except middle pair) broadly tipped with white. (*Adult:* Crest and back light purplish blue; wings and tail bright cobalt-blue, the greater coverts, secondaries, and tail barred with black; sides of head, chin, and throat purplish whitish, bordered posteriorly by a black collar, commencing under the crest, widening into a crescent across chest, and sending forward a streak to the eye; lores and narrow frontal band also black; breast and sides smoky grayish, belly and under tail-coverts white. *Young:* Similar, but colors duller and less sharply contrasted.)

*b*¹. Larger, with more white on tips of secondaries and tail-feathers (on outer tail-feather 1.00, or more, in extent); length 11.00–12.50, wing 5.00–5.70 (5.28), tail 5.05–5.70 (5.36), exposed culmen .93–1.06 (1.00), tarsus 1.24–1.45 (1.37). *Nest* of dried twigs, rootlets, etc., built usually in trees, often in orchards or about houses. *Eggs* 3–6, 1.10 × .81, pale olive, isabella-color, greenish, or buffy, rather sparsely spotted or speckled with brown. *Hab.* Eastern North America, except Florida, north to Fur Countries, west to Great Plains.................... 477. **C. cristata** (LINN.). **Blue Jay.**

*b*². Smaller, with less white on tips of secondaries and tail-feathers (that on outer tail-feather less than 1.00 in extent); length 10.00–11.50, wing 4.80–5.30 (5.02), tail 4.80–5.50 (5.08), culmen .93–1.03 (.98), tarsus 1.26–1.42 (1.34). *Hab.* Florida and along the Gulf coast to Texas.
477*a*. **C. cristata florincola** COUES. **Florida Blue Jay.**

*a*². Lower parts blue; wing and tail without any white.

*b*¹. No whitish spot over eye.

*c*¹. Head (including crest), neck, and back deep black, or brownish black, the forehead not conspicuously (often not at all) streaked on forehead with blue; blue of secondaries and tail a deep Berlin-blue shade, that of rump and lower parts paler; length about 12.00–13.00, wing 5.55–6.20 (5.86), tail 5.30–6.35 (5.74), culmen .96–1.18 (1.09), tarsus 1.55–1.81 (1.72). *Nest* in coniferous trees. *Eggs* 3–5, 1.24 × .92, usually pale bluish green, speckled with clove-brown, sometimes pale greenish gray, speckled with reddish brown. *Hab.* Northwest coast, north to Sitka, south to northern California (on coast only).
478. **C. stelleri** (GMEL.). **Steller's Jay.**

*c*². Head, neck, and back brownish slaty, the crest more or less strongly tinged with blue, and forehead conspicuously streaked with the same; blue of secondaries and tail much lighter (deep azure), that of rump and lower parts a dull turquoise tint; length 11.75–13.00, wing 5.50–6.10 (5.67), tail 5.10–5.75 (5.41), exposed culmen 1.00–1.20 (1.07), tarsus 1.53–1.73 (1.64). *Nest* in coniferous trees (often in holes), 10 to 50 or more feet from ground, bulky, "made loosely of sticks, stems of weeds, and lined with fibrous rootlets and grasses." *Eggs* 3–5, 1.19 × .89, "light blue, speckled and spotted with dark brown." (Goss.) *Hab.* Sierra Nevada (both slopes) from Fort Crook to Fort Tejon; southern coast ranges of California (?).

478*a*. **C. stelleri frontalis** (Ridgw.). **Blue-fronted Jay.**

*b*². A whitish spot over eye.

*c*¹. Head and fore-neck black.

*d*¹. White spot over eye smaller (sometimes indistinct); streaks on forehead light blue, sometimes indistinct.

Back dusky, and blue very deep, as in *C. stelleri;* length about 12.50–13.75, wing 5.90–6.60 (6.14), tail 5.80–6.65 (6.07), exposed culmen .97–1.08 (1.01), tarsus 1.60–1.68 (1.66). *Hab.* Northern Rocky Mountains, south to Wahsatch range (near Provo, Utah), west to eastern Oregon and Washington Territory.

478*c*. **C. stelleri annectens** (Baird). **Black-headed Jay.**[1]

*d*². White spot over eye very conspicuous, never indistinct; streaks on forehead bluish white, or pure white.

*e*¹. Chest dull smoky bluish; blue of rump and lower parts a light dull turquoise hue (as in *C. frontalis*); length about 11.75–13.75, wing 5.65–6.40 (5.93), tail 5.25–6.25 (5.72), exposed culmen 1.03–1.14 (1.07), tarsus 1.57–1.72 (1.65). *Nest* in trees (usually conifers). *Eggs* 3–6, 1.22 × .88, colored like those of *C. stelleri*. *Hab.* Southern Rocky Mountains, north to southern Wyoming, west to Uintah Mountains, Utah and higher mountains of Arizona, south to northern Mexico.

478*b*. **C. stelleri macrolopha** (Baird). **Long-crested Jay.**

*e*². Chest deep blue; blue of rump and lower parts of a greenish azure hue; otherwise similar to *C. macrolopha*, but back darker, more tinged with blue, and size somewhat smaller; wing 5.55–6.00 (5.82), tail 5.45–5.75 (5.59), exposed culmen 1.00–1.12 (1.06), tarsus 1.63–1.76 (1.70). *Hab.* Highlands of central Mexico, east to Mirador.

C. stelleri diademata (Bonap.). **Diademed Jay.**[2]

*c*². Head (except on sides) and fore-neck deep blue. Plumage entirely blue, except sides of head, the lores, nasal tufts, and postocular region deep black; white spot above eye larger than in other forms; wing 5.50–5.95 (5.73), tail 5.00–5.75 (5.57), exposed culmen .97–1.07 (1.02), tarsus 1.60–1.72 (1.67). *Hab.* Portions of southern Mexico (Mirador, Orizaba, Xalapa, near city of Mexico, Oaxaca, Sierra Madre of Colima, etc.) and south to Guatemala and Honduras. **C. stelleri coronata** (SWAINS.). **Coronated Jay.**[1]

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[1] [*Cyanoura stelleri*] var. *annectens* Baird, in Hist. N. Am. B. ii. 1874, 281 (in text). *Cyanocitta stelleri annectens* Ridgw., Nom. N. Am. B. 1881, No. 290*b*.

[2] *Cyanogarrulus diadematus* Bonap., Consp. i. 1850, 377. *Cyanocitta diademata* Scl., Cat. Am. B. 1861, 143.

GENUS **APHELOCOMA** CABANIS. (Page 351, pl. C., fig. 2.)

Species.

*a*¹. Lower parts chiefly light grayish or whitish.
  *b*¹. Tail longer than wing.
    *c*¹. Forehead and nasal tufts hoary whitish.

Adult: Head, neck, chest, wings, rump, upper tail-coverts, tail, and under tail-coverts dull azure-blue; forehead, nasal tufts, and superciliary region pale hoary grayish blue; back and scapulars light brownish gray; chin and throat light ash-gray, or grayish white, finely streaked with darker, the ash-gray continued in broad stripes on chest; rest of lower parts light brownish gray; length 10.50–12.50, wing 4.25–4.50 (4.40), tail 5.30–5.90 (5.73), culmen .90–.99 (.94), tarsus 1.35–1.60 (1.47). *Nest* of twigs, rootlets, etc., in thickets or low trees. *Eggs* 1.07 × .80, pale greenish, spotted with pale reddish brown or rusty. *Hab.* Florida.
479. **A. floridana** (BARTR.). **Florida Jay.**

*c*². Forehead and nasal tufts bright blue, like crown.
  *d*¹. Lower tail-coverts bright blue, markedly different from color of belly.
    *e*¹. Back and scapulars dull slaty grayish, tinged with blue; breast, sides, and flanks light ash-gray; blue of upper parts, etc., a light dull azure hue; length 11.50–12.75, wing 4.70–5.35 (5.02), tail 5.20–6.20 (5.68), culmen .93–1.06 (1.01), tarsus 1.45–1.59 (1.55). *Nest* in thickets or low trees. *Eggs* 3–6, 1.09 × .79, pale green, pale greenish buff, or pale grayish green, rather sparsely marked with very distinct dots or small spots of deep madder-brown. *Hab.* Middle Province of United States, north to eastern Oregon, Idaho, Montana, and Wyoming, west to western Nevada and Arizona, east to Colorado and New Mexico, and south into northwestern Mexico.. 480. **A. woodhousei** (BAIRD). **Woodhouse's Jay.**
    *e*². Back and scapulars dark sepia-brown, without blue tinge; breast, sides, and flanks brownish white, or very pale

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[1] *Garrulus coronatus* SWAINS., Philos. Mag. i. 1827, 437. *Cyanocitta coronata* STRICKL., Ann. N. H. 1845, 261.

brownish gray; blue of upper parts, etc., a very deep azure—almost Berlin-blue—shade; length about 11.50–12.25, wing 5.20–5.30 (5.27), tail 6.05–6.25 (6.15), culmen 1.15–1.30 (1.22), tarsus 1.70–1.80 (1.75). *Hab.* Santa Cruz Island, southern California.

481.1. **A. insularis** Hensh. **Santa Cruz Jay.**[1]

*d*². Lower tail-coverts white, or else very slightly tinged with blue.

*e*¹. Sides of head blackish, with little, if any, blue tinge; breast grayish white or very pale grayish, like belly; back and scapulars brownish gray, without blue tinge.

*f*¹. Sides of chest bright blue, the middle portion streaked with blue; white superciliary stripe very distinct.

*g*¹. Larger, with smaller bill and feet, the blue darker, the lower parts less purely white; length about 11.50–12.25, wing 4.70–5.20 (4.93), tail 5.45–6.10 (5.71), culmen .87–1.03 (.96), tarsus 1.50–1.94 (1.62). *Nest* in thickets or low trees. *Eggs* 3–6, 1.10 × .81, pure bluish green, speckled with clove-brown; dull greenish white, speckled or spotted with chestnut, or light buffy spotted with rusty brown and lilac-gray. *Hab.* Pacific coast of United States, from southern California to Oregon, east to western Nevada.

(54.) 481. **A. californica** (Vig.). **California Jay.**

*g*². Smaller, with larger bill and feet, the blue lighter, the lower parts more purely white; length 11.50–12.00, wing 4.55–5.00 (4.63), tail 5.20–5.80 (5.53), culmen .94–1.07 (1.03), tarsus 1.43–1.60 (1.50). *Hab.* Lower California (vicinity of Cape St. Lucas). 481*a*. **A. californica hypoleuca** Ridgw. **Xantus's Jay.**[2]

*f*². Sides of chest dull brownish gray, the middle portion dull white, streaked with brownish gray or light grayish brown; white superciliary stripe less distinct (though always apparent).

Otherwise scarcely different in color from *A. californica;* length (skins) about 11.00–11.50, wing 5.40–5.55 (5.48), tail 5.95–6.10 (6.00), culmen .98–1.01 (1.00), tarsus 1.60. *Hab.* Southern Mexico (Orizaba, Oaxaca, Atlisco, etc.).

A. sumichrasti (Ridgw.). **Sumichrast's Jay.**[3]

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[1] *Aphelocoma insularis* Hensh., Auk, iii. Oct. 1886, 452.

[2] New subspecies; based on many specimens from Cape St. Lucas, La Paz, and contiguous localities, collected by J. Xantus and L. Belding.

[3] *Cyanocitta californica* var. *sumichrasti* Ridgw., in Hist. N. Am. B. ii. 1874, 283. *Aphelocoma sumichrasti* Sharpe, Cat. B. Brit. Mus. iii. 1877, 114.

e^2. Sides of head uniform bright blue, like crown, etc.; breast deep brownish gray, changing rather abruptly to pure white on belly and lower tail-coverts; back and scapulars dark slaty gray, strongly tinged with blue.

Adult: Chest light grayish blue, broadly streaked with white (as in *A. californica*); superciliary streak very indistinct, or obsolete; length (skin) about 11.50, wing 5.40, tail 5.70, exposed culmen .95, tarsus 1.60. *Hab.* Eastern plateau of Mexico, north to western Texas.

480.1. **A. cyanotis** Ridgw. **Blue-eared Jay.**[1]

b^2. Tail shorter than wings.

c^1. Tail 5.50, or less.

Adult: Above bright light azure-blue, including whole side of head, down to throat, the back and scapulars dull grayish blue, or plumbeous; chin and throat dull white, deepening into dull light brownish gray on breast, this again fading into pure white on lower belly and under tail-coverts; length (fresh) 11.50, wing 5.80–5.90, tail 5.30–5.40 (graduated for only about .30), culmen 1.05–1.10, tarsus 1.60. *Hab.* Lower Rio Grande Valley, and southward.

A. couchi (Baird). **Couch's Jay.**[2]

c^2. Tail more than 5.50.

d^1. Tail even, or very slightly rounded.

Colors of *A. couchi;* length 13.00, tail 7.00. *Hab.* "Mexico."

A. ultramarina (Bonap.). **Ultramarine Jay.**[3]

d^2. Tail decidedly rounded.

e^1. Colors of *A. couchi*, but rather paler above, the chest rather more decidedly ashy, and throat more grayish; length about 11.50–13.00, wing 6.10–6.50 (6.34), tail 5.65–6.10 (5.80), graduated for .50–.60, culmen 1.00–1.08 (1.02), tarsus 1.58–1.66 (1.60). *Nest* a loose, frail structure of dry twigs and rootlets, built in small trees. *Eggs* 4–7, 1.19 × .88, plain greenish blue, very similar in color to those of the Robin (*Merula migratoria*). *Hab.* Northwestern Mexico, and contiguous portions of Arizona and New Mexico.

482. **A. sieberii arizonæ** Ridgw. **Arizona Jay.**

e^2. Colors much darker and brighter than in *A. arizonæ*, the back more or less strongly tinged with azure-blue (sometimes almost uniform with head, etc.); length about 11.50–13.00, wing 6.70–7.40 (7.06), tail 6.30–6.75 (6.58), culmen 1.00–1.08

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[1] New species; type, No. 8465, U. S. Nat. Mus.; "John Taylor, Esq., Mexico, Sept. 1836."

[2] *Cyanocitta couchi* Baird, B. N. Am. 1858, 588; ed. 1860, pl. 60, fig. 2. *Aphelocoma couchi* Sharpe, Cat. B. Brit. Mus. iii. 1877, 116.

[3] *Corvus ultramarinus* Bonap., Jour. Ac. Nat. Sci. Phil. 8vo, iv. 1825, 387. *Aphelocoma ultramarina* Sharpe, Cat. B. Brit. Mus. iii. 1877, 115.

(1.02), tarsus 1.58–1.66 (1.60). *Hab.* Southern Mexico (Vera Cruz and southward).

A. sieberii (Wagl.). **Sieber's Jay.**[1]

a^2. Lower parts entirely uniform rich blue, like upper parts.

Plumage entirely uniform rich azure-blue, except lores, which are deep black, and under surface of wings and tail, which are dull black; size of *A. sieberii*. *Hab.* Highlands of Guatemala and southern Mexico.

A. unicolor (Du Bus). **Unicolored Jay.**[2]

GENUS **XANTHOURA** BONAPARTE. (Page 351, pl. XCIX., fig. 3.)

Species.

COMMON CHARACTERS.—*Adults* uniform bright green above, becoming more bluish toward tips of middle tail-feathers; nasal tufts, triangular patch covering anterior portion of malar region (reaching upward to eye), and whole top of head (except anteriorly), rich campanula-blue; anterior part of forehead white, changing gradually into blue of crown; tail, except four middle feathers, pure primrose-yellow; sides of head (except as described above), chin, throat, and chest, uniform deep black, with abrupt semicircular outline against breast; rest of under parts light green or yellow. *Young:* Similar to adult, but colors duller, the blue of crown tinged with green, white of forehead stained with, or replaced by, yellow, black of head much duller, and lower parts pale creamy yellow.

a^1. Lower parts pale verdigris-green, more or less tinged, especially beneath surface, with pale primrose-yellow; length 11.00–12.00, wing 4.40–4.80, tail 5.10–5.80. *Nest* in small, usually thorny, trees or in thickets. *Eggs* 3–5, 1.08 × .80, pale buff or pale grayish buff, thickly speckled with umber-brown. *Hab.* Eastern Mexico, north to lower Rio Grande Valley in Texas, south to Vera Cruz and Puebla............................ 483. **X. luxuosa** (Less.). **Green Jay.**

a^2. Lower parts chiefly or entirely primrose-yellow; otherwise like *X. luxuosa*. *Hab.* Southern Mexico (Colima, Tehuantepec, etc.), Yucatan, Guatemala, and Honduras.

X. luxuosa cyanocapilla (Cab.). **Yellow-bellied Green Jay.**[3]

GENUS **PERISOREUS** BONAPARTE. (Page 351, pl. XCVI., fig. 3.)

Species.

COMMON CHARACTERS.—*Adults* with forehead, nasal tufts, sides of head, throat, and chest white, or whitish; occiput (sometimes nearly whole top of head) grayish, dusky, or blackish; upper parts uniform dusky grayish or brownish, the tail-feathers indistinctly (though sometimes broadly) tipped with whitish; lower parts plain grayish or whitish. *Young*, entirely plain dusky, varying from a slaty to a brownish tint. *Nest* in coniferous trees, bulky, composed of dried twigs, shreds of bark, etc., lined with softer materials. *Eggs* 2–5, with pale ground-color (often dull whitish) speckled with brown and purplish gray.

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[1] *Pica sieberii* WAGL., Syst. Av. 1827, Pica, sp. 23. *Aphelocoma sieberi* CAB., Mus. Hein. i. 1851, 221.

[2] *Cyanocorax unicolor* DU BUS, Bull. Ac. Roy. Brux. xiv. pt. 2, 1847, 103. *Aphelocoma unicolor* SHARPE, Cat. B. Brit. Mus. iii. 1877, 118.

[3] *Cyanocorax cyanocapillus* CAB. in Tschudi Fauna Per. 1844–46, 233. *Xanthura cyanocapilla* SHARPE, Cat. B. Brit. Mus. iii. 1877, 131.

a^1. Feathers of back without distinct paler shaft-streaks; breast, belly, sides, and flanks grayish, much darker than throat and chest.

b^1. *Adult* with whole occiput and hinder part of crown (sometimes whole crown) blackish or dusky grayish, this touching (sometimes surrounding) the eye; *young* with top of head uniform dusky, like back.

c^1. Blackish of hood scarcely bordering eye underneath; occiput dull sooty blackish, or dark sooty slate, the white on forehead usually extending back to or beyond posterior border of eye.

Breast, etc., light brownish gray, always much paler than back. *Young*, uniform sooty slate, with nasal tufts, lores, and chin deep black; a whitish rictal stripe (usually indistinct). Length 11.00–12.10, wing 5.60–5.90 (5.75), tail 5.65–6.35 (6.00), culmen .95–1.08 (1.00), tarsus 1.33–1.47 (1.39). *Eggs* 1.16 × .82, dull white, drab-white, or very pale grayish buff, speckled with hair-brown or grayish brown, and lilac-gray. *Hab.* Northern New England and New York, northern Michigan and Minnesota, northward to Hudson's Bay and interior arctic regions.

484. **P. canadensis** (Linn.). **Canada Jay.**

c^2. Blackish of hood broadly bordering eye all round; occiput deeper black, the white (or pale smoky) of forehead usually not reaching as far back as posterior border of eye.

d^1. Colors extremely dark, the breast, etc. (except in much worn or faded plumage), deep slate-gray (sometimes nearly as dark as back), almost abruptly contrasted against white of chest; forehead usually pure white, or but faintly tinged with smoky yellowish. *Young*, uniform deep slate-color, without sooty tinge, the nasal tufts and lores deep black, the throat nearly black; an indistinct grayish rictal stripe. Length about 11.00–12.00, wing 5.30–5.80 (5.53), tail 5.30–5.85 (5.64), culmen .95–1.09 (1.02), tarsus 1.35–1.47 (1.40). *Hab.* Coast-region of Labrador (interior also?), north to Hudson's Strait.

484*c*. **P. canadensis nigricapillus** Ridgw. **Labrador Jay.**

d^2. Colors almost equally dark, but more dingy, the white of forehead usually much obscured by a smoky brownish or yellowish wash, and gray of breast, etc., more or less tinged with same. *Young*, uniform brownish slate-color, the lores, nasal plumes, and orbits blackish; an indistinct rictal stripe of light grayish brown, or smoky gray (sometimes whitish). Length about 10.00–12.00, wing 5.20–5.75 (5.54), tail 5.20–6.00 (5.66), culmen .94–1.08

(1.01), tarsus 1.30–1.42 (1.37). *Hab.* Alaska, except southern coast-district.

484*b*. **P. canadensis fumifrons** Ridgw. **Alaskan Jay.**

*b*². *Adult* with whole head white, except occiput, which is plumbeous gray, this color not reaching anteriorly to the eye; young with top of head dull white, tinged with grayish brown.

Adult: Head and neck pure white, the occiput and upper hind-neck deep plumbeous-gray; back and other upper parts lighter plumbeous-gray; breast, belly, sides, and flanks light brownish gray. *Young:* Nasal tufts, lores, and orbits blackish dusky; whole crown, and a broad malar stripe, dull whitish, tinged with pale brownish gray; throat dusky grayish; rest of lower parts more brownish gray, the feathers of belly, etc., tipped with paler. Length about 11.25–13.00, wing 5.90–6.30 (6.10), tail 5.80–6.35 (6.07), culmen .97–1.08 (1.03), tarsus 1.35–1.44 (1.40). *Nest* in coniferous trees, bulky (about 7.00 across by 4.00 in height), composed of dead twigs, pine-needles, dried grasses, strips of bark, etc., lined with finer vegetable materials, feathers, etc.; cavity about 4.00 across by 2.00 deep. *Eggs* 3–5, 1.16 × .86, grayish white, speckled with various shades of brown. *Hab.* Rocky Mountains, south to Arizona (White Mountains) and New Mexico, north into British America.

484*a*. **P. canadensis capitalis** Baird. **Rocky Mountain Jay.**

*a*². Feathers of back with distinct paler shaft-streaks; breast, belly, sides, and flanks white, like throat and chest.

Adult: Upper half of head, except forehead and nasal tufts, sooty black; forehead and nasal tufts white, sometimes tinged with brownish; back and scapulars varying from dull brownish gray to sepia-brown, the feathers with distinct though narrow whitish shaft-streaks; wings and tail brownish gray, the wing-coverts, tertials, and tail-feathers narrowly (sometimes indistinctly) tipped with whitish; lower parts entirely white, sometimes very faintly tinged posteriorly with pale brownish or brownish gray. *Young:* Dull grayish sooty brown, paler and more decidedly brownish below, darkest on top of head. Length about 9.50–11.00, wing 5.15–5.75 (5.53), tail 5.20–5.90 (5.56), culmen .84–.99 (.92), tarsus 1.23–1.40 (1.30). *Eggs* 1.04 × .79, grayish white, greenish white, or very pale grayish green, speckled with hair-brown and lilac-gray. *Hab.* Northwest coast, from northern California (Humboldt Bay) and northern Sierra Nevada (both slopes) north to British Columbia.

485. **P. obscurus** Ridgw. **Oregon Jay.**

Genus CORVUS Linnæus. (Page 351, pl. XCVII., fig. 1; pl. XCVIII., fig. 1.)

Species.

Common Characters.—Entirely black, the plumage more or less glossy. *Nest* a bulky structure of coarse sticks, etc., in trees or on cliffs (according to the locality). *Eggs* 2–7, pale bluish green, pale olive, or olive, spotted or dashed (or both) with olive-brown (sometimes nearly uniform olive, from density of markings).

*a*¹. Feathers of throat lanceolate, distinct from one another. (*Ravens.*) (*Nest* usually among rocks.)

*b*¹. Feathers of neck dull gray at base; nasal tufts covering not more than basal half of upper mandible; exposed culmen 2.40, or more, wing more than 15.00.

*c*¹. Third quill equal to or longer than fifth.

*d*¹. Bill relatively shorter and higher, lanceolate feathers of throat less developed, more purplish in color, and plumage usually less lustrous; wing 16.75–18.00 (17.25), tail 9.40–10.00 (9.60), exposed culmen 2.65–3.00 (2.81), depth of bill through nostril 1.05-1.12 (1.08), tarsus 2.78–2.95 (2.86). *Hab.* Europe and parts of Asia. **C. corax** LINN. **Raven.**[1]

*d*². Bill relatively longer and shallower, lanceolate feathers of throat larger, more violet or bluish, and plumage usually more lustrous.

*e*¹. With smaller or slenderer bill, the tarsus more slender, with less of upper portion concealed by feathering of lower part of thighs; length about 21.50–26.00, wing 15.10–18.00 (16.87), tail 9.00–11.00 (9.86), exposed culmen 2.40–3.05 (2.80), depth of bill through nostril .82–1.05 (.94), tarsus 2.60–3.00 (2.78). *Eggs* 1.95 × 1.29. *Hab.* Western United States, and south to Guatemala.

486. **C. corax sinuatus** (WAGL.). **Mexican Raven.**

*e*². With larger or stouter bill, tarsus shorter and stouter, with more of upper portion concealed by feathering of lower part of thighs; length about 22.00–26.50, wing 16.50–18.00 (16.99), tail 9.20–10.50 (9.86), exposed culmen 2.65–3.45 (3.03), depth of bill at nostrils .95–1.12 (1.04), tarsus 2.50–2.80 (2.65). *Eggs* 1.95 × 1.36. *Hab.* Northern North America, from Greenland to Alaska, south to British Columbia, northern Michigan, Canada, New Brunswick, etc.[2]

486*a*. **C. corax principalis** RIDGW. **Northern Raven.**[3]

*c*². Third quill decidedly shorter than fifth.

Otherwise like *C. corax principalis*, but still larger; wing 16.75–18.10 (17.44), tail 10.00–10.85 (10.49), exposed culmen 3.00–3.40

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[1] *Corvus corax* LINN., S. N. ed. 10, i. 1758, 105.

[2] From lack of specimens, I am unable to determine which form Ravens from the eastern United States belong to.

[3] New subspecies, for which there is unfortunately no older name available. *Corvus carnivorus* BARTR. and *C. lugubris* AGASS. are purely *nomina nuda; C. corax* var. *littoralis* HOLB. (1843) is preoccupied (*C. littoralis* BREHM, 1831); while *C. vociferus* CABOT, quoted by COUES and others as a synonyme of *C. corax*, is in reality *Psilorhinus mexicanus* RÜPP., and is described from Yucatan.

(3.20), depth of bill at nostrils 1.05–1.10 (1.08), tarsus 2.60–2.85 (2.75). *Hab.* Commander Islands, Kamtschatka. (Probably also westernmost Aleutians.)

C. corax behringianus Dybowski. **Bering's Raven.**[1]

*b*². Feathers of neck, all round, pure white at base; nasal tufts covering much more than basal half of upper mandible; exposed culmen less than 2.40, wing less than 15.00.

Length 18.75–21.00, wing 13.10–14.25 (13.67), tail 7.50–8.60 (8.10), exposed culmen 2.00–2.35 (2.15), depth of bill at base .85–.90 (.87), tarsus 2.20–2.50 (2.35). *Eggs* 1.74 × 1.19, with markings averaging finer and more longitudinal than in other species. *Hab.* Southwestern United States and table-lands of Mexico; north to Indian Territory, Kansas, Colorado, and southern California, south to Guanajuato and Puebla......... 487. **C. cryptoleucus** Couch. **White-necked Raven.**

*a*². Feathers of throat short, blended. (*Crows.*) (*Nest* usually in trees.)

*b*¹. Nostrils completely hidden by the fully-developed nasal tufts; corner of mouth feathered.

*c*¹. Tarsus 2.15, or more; lower parts glossed with violet (on margins of feathers) like upper parts; wing averaging more than 11.75, tail averaging more than 7.00.

*d*¹. Larger, with relatively larger and thicker bill.

*e*¹. Wing and tail averaging longer, but bill and feet decidedly smaller; length 17.00–21.00, wing 11.90–13.25 (12.36), tail 6.90–8.00 (7.43), exposed culmen 1.80–2.05 (1.92), depth of bill at base .72–.82 (.76), tarsus 2.20–2.40 (2.27). *Eggs* 1.69 × 1.17. *Hab.* Eastern North America, except southern Florida and arctic districts.

488. **C. americanus** Aud. **American Crow.**

*e*². Wing and tail averaging shorter, but bill and feet decidedly larger; length about 20.00, wing 11.50–12.30 (12.15), tail 7.00–7.70 (7.23), exposed culmen 2.00–2.20 (2.08), depth of bill at base .75–.85 (.80), tarsus 2.40–2.50 (2.45). *Hab.* Southern Florida.

488*a*. **C. americanus floridanus** Baird. **Florida Crow.**

*d*². Smaller, with relatively smaller and more slender bill.

Length about 18.50–19.25, wing 11.10–12.75 (11.95), tail 6.45–7.80 (7.10), exposed culmen 1.60–1.95 (1.78), depth of bill at base .62–.70 (.68), tarsus 2.15–2.40 (2.23). *Hab.* Western United States, north to Washington Territory (Puget Sound), Idaho, Montana, etc., south to northern Mexico, east to Rocky Mountains.

—. **C. americanus hesperis** Ridgw. **California Crow.**[2]

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[1] *Corvus corax behringianus* Dybowsk. Bull. Soc. Zool. France, 1883, 363.

[2] New subspecies; a very strongly characterized race which also differs markedly in habits and notes from the eastern bird.

c^2. Tarsus not more than 2.10; wing averaging less than 11.10, the tail averaging less than 6.50.

d^1. Plumage glossed with violet or purple above, lustreless black or very faintly glossed with purplish beneath.

e^1. Larger and less glossy, the lower parts mostly dead black (sometimes with perceptible violet gloss), the upper parts glossed with dull violet (as in *C. americanus*); length about 16.00–17.00, wing 10.10–11.50 (10.05), tail 5.90–7.00 (6.45), exposed culmen 1.60–1.90 (1.75), depth of bill at base .65–.72 (.70), tarsus 1.80–2.05 (1.93). *Eggs* 1.56 × 1.08. *Hab.* Northwest coast, from Washington Territory (and Oregon?) to Kadiak, Alaska.

489. **C. caurinus** BAIRD. **Northwest Crow.**

e^2. Smaller and more glossy, the lower parts glossy black, with slight (?) purple reflections, the upper parts more distinctly glossed with purple; length about 15.00, wing 10.35, tail 6.00, "bill" 1.80, tarsus 2.00. *Hab.* Cuba.

C. minutus GUNDL. **Cuban Fish Crow.**[1]

d^2. Plumage glossed with violet-bluish, greenish blue, or steel-blue above, with greenish on lower parts.

e^1. Larger and less glossy, the upper parts glossed with violet-bluish, changing to a more greenish blue tint on head, neck, and lower parts; length about 15.00–17.50, wing 10.20–11.40 (10.88), tail 6.00–7.00 (6.37), exposed culmen 1.60–1.80 (1.71), depth of bill at base .58–.65 (.61), tarsus 1.70–2.00 (1.87). *Eggs* 1.46 × 1.06. *Hab.* Atlantic and Gulf coasts of United States, from Long Island to Louisiana..................... 490. **C. ossifragus** WILS. **Fish Crow.**

e^2. Smaller and much more glossy, the upper parts soft steel-blue, changing to violet on crown, the lower parts rich soft greenish blue; length about 12.00–14.50, wing 9.20–9.80 (9.32), tail 5.80–6.50 (6.11), exposed culmen 1.50–1.65 (1.55), depth of bill at base .50–.58 (.54), tarsus 1.50–1.70 (1.62). *Hab.* Northern Mexico (Mazatlan to Tampico).

C. mexicanus GMEL. **Mexican Crow.**[2]

b^2. Nostrils scarcely concealed by the short, imperfectly developed nasal tufts; corners of mouth naked.

Entirely violaceous-black, the feathers everywhere smoky gray beneath surface; wing 11.00, tail 7.75, culmen (to base) 2.45, depth of bill at base .80. *Hab.* Cuba.

C. nasicus TEMM. **Cuban Crow.**[3]

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[1] *Corvus minutus* GUNDL., Jour. Bost. Soc. vi. 1852, 315.

[2] *Corvus mexicanus* GMEL., S. N. i. 1788, 375.

[3] *Corvus nasicus* TEMM., Pl. Col. ii. 1838, pl. 413.

GENUS **PICICORVUS** BONAPARTE. (Page 351, pl. XCIX., fig. 1.)

Species.

Adult: Uniform ash-gray, becoming white on fore-part of head; wings and two middle tail-feathers glossy black, the secondaries broadly tipped with white; tail, except middle feathers, mainly white. *Young:* Similar to adult, but colors duller and browner. Length about 12.00–13.00, wing 7.10–8.00, tail 5.10–5.40. *Nest* in coniferous trees (sometimes in cavities), bulky, composed of dried twigs, lined with rootlets, etc. *Eggs* 1.33 × .92, dull white, sparingly speckled, chiefly on larger end, with brown and purplish gray. *Hab.* Higher coniferous forests of western North America; north to Putnam River, Alaska, south to Arizona, east to (and including) Rocky Mountains... 491. **P. columbianus** (WILS.). **Clarke's Nutcracker.**

GENUS **CYANOCEPHALUS** BONAPARTE. (Page 351, pl. XCIX., fig. 2.)

Species.

Adult: Uniform grayish blue, becoming deeper blue on head, the throat bright blue, streaked with white. *Young:* Uniform dull grayish blue, lighter beneath. Length about 10.00–11.75, wing 5.70–6.00, tail 4.80–4.85. *Nest* in piñon trees, 5–10 or more feet up, bulky, composed of shreds of piñon, cedar, and sage-brush bark, grass- and weed-stalks, small twigs, etc. *Eggs* 3–5, 1.19 × .87, pale greenish blue or bluish or greenish white, thickly but finely speckled with olive-brown. *Hab.* Plateau region of western North America, chiefly between Rocky Mountains and Sierra Nevada, entirely across United States.
492. **C. cyanocephalus** (WIED). **Pinon Jay.**

FAMILY **STURNIDÆ.**—THE STARLINGS. (Page 322.)

Genera.

(Characters same as those given for the Family)...... **Sturnus.** (Page 364.)

GENUS **STURNUS** LINNÆUS. (Page 364, pl. C., fig. 3.)

Species.

Adult in summer (sexes alike): Glossy greenish and purplish black, speckled, more or less extensively and conspicuously, with light buffy brown and whitish; greater wing-coverts, secondaries, quills, and tail-feathers edged with light brownish buff; bill yellow. *Adult in winter:* Light brown (on upper parts) and whitish (on lower parts) spotting much more conspicuous than in summer, often obscuring or nearly concealing the underlying glossy green and purple; bill blackish. *Young:* Plain grayish brown, the throat whitish, edges of greater wing-coverts, secondaries, quills, and tail-feathers light dull buffy. Length about 7.50–8.50, wing 5.00–5.10, tail

2.60–2.90, exposed culmen .95–1.00, tarsus 1.15–1.25. *Nest* in holes of trees, about buildings, etc. *Eggs* 4–7, 1.16 × .84, plain pale greenish blue or bluish white. *Hab.* Europe and northern Asia; accidental in Greenland.

493. **S. vulgaris** Linn. **Starling.**

FAMILY ICTERIDÆ.—THE BLACKBIRDS, ORIOLES, ETC. (Page 321.)

Genera.

*a*¹. Outlines of bill nearly or quite straight, the tip not decurved,[1] the commissure neither inflected nor sinuated. (Subfamily *Icterinæ.*)

- *b*¹. Bill stout, conical, its depth through the base equal to at least one-third the length of the culmen. (*Agelaiæ.*)
  - *c*¹. Tail-feathers sharply pointed at tips; middle toe, with claw, longer than tarsus.. **Dolichonyx.** (Page 366.)
  - *c*². Tail-feathers not pointed at tips; middle toe, with claw, not longer than tarsus.
    - *d*¹. Bill much shorter than head, its depth through base equal to about half the length of the exposed culmen, the latter distinctly convex; plumage uniform blackish or dusky, streaked only in young.............................. **Molothrus.** (Page 367.)
    - *d*². Bill nearly as long as head, its depth through base less than half the length of the exposed culmen, the latter very straight; sexes remarkably different in size.
      - *e*¹. Claws smaller, the lateral ones scarcely reaching to base of middle one; first quill shorter than fourth; plumage of male uniform black, with bright red lesser wing-coverts; of female, dusky, more or less streaked with white. **Agelaius.** (Page 368.)
      - *e*². Claws larger, the lateral ones reaching to beyond base of middle one; first quill longer than fourth (sometimes longest); plumage of male uniform black, with yellow head, neck, and chest, and white wing-patch; of female, dusky, with yellowish throat and chest... **Xanthocephalus.** (Page 368.)
- *b*². Bill slender, its depth through base decidedly less than one-third the length of the culmen.
  - *c*¹. Tail less than two-thirds as long as wing, the feathers sharp-pointed; wing short, the tertials lengthened (reaching almost to tips of primaries); bill long (longer than head), slender, the culmen much flattened; feathers of top of head with stiffened, glossy shafts; outstretched feet reaching beyond tip of tail; color above brownish, barred and streaked with black, beneath yellow, with a black crescent on chest, the sexes not essentially different. **Sturnella.** (Page 371.)

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[1] Except in genus *Icterus*, part.

c^2. Tail nearly or quite as long as wing, the feathers not pointed at tips; wing moderate, the tertials not lengthened; bill shorter than head, the culmen narrow, not flattened; feathers on top of head without stiffened shafts; outstretched feet falling far short of tip of tail; color black and yellow, orange, or chestnut in adult males (sometimes in females also), usually with more or less of white on wings. **Icterus.** (Page 372.)

a^2. Outlines of bill distinctly curved, the tip distinctly decurved, the commissure distinctly inflected and sinuated. (Subfamily *Quiscalinæ.*)

b^1. Tail much shorter than wing, nearly even, not folded laterally; bill shorter than head, slender.............................. **Scolecophagus.** (Page 378.)

b^2. Tail longer than wing, graduated, and folded laterally; bill as long as or longer than head, stout .... **Quiscalus.** (Page 379.)

GENUS **DOLICHONYX** SWAINSON. (Page 365, pl. CI., fig. 1.)

Species.

COMMON CHARACTERS.—*Adult male in spring:* General color black, the occiput and hind-neck, scapulars, rump, and upper tail-coverts whitish or buffy. *Adult female:* General color ochraceous, tinged with grayish brown, paler (more buffy yellowish) beneath; upper parts and flanks streaked with dusky; crown divided by a median buffy stripe. *Adult male in fall and winter:* Similar to adult female, but colors rather darker, or deeper. *Young* (not seen). *Nest* in tussocks of grass or among weeds in meadows. *Eggs* 4–7, dull white or brownish white, heavily spotted or blotched with vandyke-brown, usually with a few fine lines or irregular markings of blackish.

a^1. *Adult male* with hind-neck usually deep buff, inclining to ochraceous; streaks on back also deep buff or ochraceous; lower back rather deep ash-gray. *Adult female* with ground-color of plumage deep olive-buffy. Length 6.30–7.60, wing 3.70–4.00 (3.88), tail 2.60–2.90 (2.83). *Eggs* .83 × .62. *Hab.* Eastern North America, west to edge of Great Plains, breeding in northern United States and more southern British Provinces; in winter, south to West Indies and South America..... 494. **D. oryzivorus** (LINN.). **Bobolink.**

a^2. *Adult male* with hind-neck and streaks on back paler buff, often nearly pure white; lower back very pale ashy, or grayish white. *Adult female* with ground-color of plumage pale grayish buff. Length (male) about 7.00–7.25, wing 3.75–4.10 (3.94), tail 2.75–3.00 (2.89). *Hab.* Great Plains, east to Dakota, north to Fort Garry and Manitoba, west to Salt Lake Valley and eastern Nevada (Ruby Valley).

(55.) 494*a*. **D. oryzivorus albinucha** RIDGW. **Western Bobolink.**

GENUS **MOLOTHRUS** SWAINSON. (Page 365, pl. CI., fig. 2.)

Species.

(*No nest*, but eggs deposited in nests of other species.)

*a*¹. Culmen not more than .72; adult males with head brown. *Adult males:* Head, neck, and chest uniform brownish (varying greatly in tint); rest of plumage glossy black, with a greenish reflection, changing to purplish next to the brown of the neck, especially on upper back. *Adult females:* Plain brownish gray, darker on upper parts, paler on chin and throat, the feathers, especially on back and breast, with indistinct darker shaft-streaks. *Young:* Above dull brownish gray, the feathers bordered with pale buffy; lower parts dull light buffy, broadly but rather indistinctly streaked with dull brownish gray.

*b*¹. Larger: Length (male) about 7.75–8.25, wing 4.00–4.60 (4.31), tail 2.90–3.35 (3.08), culmen .61–.72 (.66), tarsus .98–1.12 (1.05); female considerably smaller. *Eggs* .84 × .65, dull white, greenish white, or brownish white, speckled or spotted, more or less densely, with brown. *Hab.* United States and more southern British Provinces; south, in winter, to southern Mexico.. 495. **M. ater** (BODD.). **Cowbird.**

*b*². Smaller: Length (male) about 7.00–7.50, wing 3.70–4.15 (3.93), tail 2.85–3.00 (2.91), culmen .57–.63 (.60), tarsus .93–1.00 (.96); female smaller. *Eggs* .76 × .59, colored like those of *M. ater*. *Hab.* Mexico and contiguous portions of United States, from Texas to Arizona and Lower California............ 495*a*. **M. ater obscurus** (GMEL.). **Dwarf Cowbird.**

*a*². Culmen .75, or more; adult male with head black. *Adult male:* Head, neck, back, and lower parts uniform glossy black, with a soft bronzy lustre, duller on head; lesser and middle wing-coverts, outermost scapulars, and rump glossed with violet; wings in general, upper tail-coverts, and tail glossy blue-black, changing to greenish; iris bright red; length about 9.00–9.50, wing 4.60–4.80, tail 3.70–3.80, culmen .85–.90, tarsus 1.15–1.25. *Young male:* Entirely blackish, with distinct gloss only on wings, etc., the lower parts, back, etc., without bronzy lustre. *Adult female:* Above dark brownish gray, the feathers of back, etc., with darker, somewhat glossy centres, the wing-coverts, etc., with paler margins; lower parts lighter brownish gray, the feathers sometimes showing distinct dusky shaft-streaks; length about 8.00–8.50, wing about 4.10, tail 3.25, culmen .75, tarsus 1.05. *Eggs* .91 × .72, plain greenish white or dull bluish white. *Hab.* Mexico and Central America, south to Panama, north to lower Rio Grande Valley in Texas.

(56.) 496. **M. robustus** CABAN. **Red-eyed Cowbird.**

GENUS **XANTHOCEPHALUS** SWAINSON. (Page 365, pl. CI., fig. 3.)

Species.

Adult male in summer: Head, neck, and chest yellow, varying in tint from a lemon to an orange (rarely to pinkish saffron) shade; primary coverts and lower greater coverts white; rest of plumage uniform black; length about 10.60–11.10, wing 5.65–5.80, tail 4.50–4.85. *Adult male in winter:* Similar to summer plumage, but yellow of top of head obscured by brownish tips to the feathers. *Adult female:* Brownish dusky, the throat and chest dull yellowish, and breast mixed with white; length about 9.00–10.00, wing 4.40–4.65, tail 3.50–3.70. *Young male, first winter:* Similar to adult female, but larger and deeper colored. *Young* (nestling): General color isabella-brown, lighter beneath; wings and tail blackish. *Nest* fastened to upright reeds or similar supports in marshes, composed of dried grass, sedges, reeds, etc. *Eggs* 2–6, 1.02 × .71, dull white, grayish white, pale grayish brown, or (more rarely) pale grayish green, thickly speckled or sprinkled with umber-brown or olive, occasionally with a few "pen-lines" of black. *Hab.* Western North America, in marshes, east, regularly, to Wisconsin, Illinois, Kansas, and Texas, accidentally to Massachusetts, South Carolina, and Florida.

497. **X. xanthocephalus** (BONAP.). **Yellow-headed Blackbird.**

GENUS **AGELAIUS** VIEILLOT. (Page 365, pl. CI., fig. 4.)

Species.

COMMON CHARACTERS.—*Adult males* uniform deep black, ornamented by a patch of bright red covering lesser wing-coverts, the middle coverts (except in *A. gubernator*) buffy, ochraceous, or white, forming a conspicuous band along posterior border of the red patch; *in winter*, with uniformity of the black more or less broken by rusty terminal borders to the feathers, especially on back and scapulars, and color of middle coverts more pronounced. *Adult females:* Above more or less conspicuously streaked with dusky, and brownish or grayish (sometimes mixed with rusty), the wing-feathers with distinct lighter edgings; a distinct light superciliary stripe, with a dusky one immediately beneath it; lower parts distinctly striped, or broadly streaked, with dusky and whitish, the chin and throat usually more or less tinged with buffy or pinkish; *in winter*, the colors much browner, with more or less of rusty above, and white of lower parts less pure. (In the two Cuban species, the females uniform black, like the males.) *Young:* Essentially like adult females, but ground-color of lower parts never (?) white, the lighter streaks being some shade of buffy, markings more suffused, and texture of plumage different. *Nest* attached to upright stems of sedges, reeds, etc., or to branches of bushes or small trees, in marshes or swamps, compact, composed chiefly of dried grasses. *Eggs* 3–5, pale bluish, varying to olive, variously marked with black, brown, and purplish gray, usually in irregular "pen-lines" and blotches.

a^1. Wing exceeding tail by length of tarsus; sexes decidedly different in color, the lesser wing-coverts of adult male bright red.

b^1. *Adult males* deep black, with very faint dull bottle-greenish gloss, the lesser wing-coverts bright vermilion-scarlet, the middle coverts never pure white; *adult females* with texture of plumage comparatively harsh, but with colors extremely variable.

c^1. *Adult females* much streaked below, and never uniform above.

d^1. *Adult males* with middle wing-coverts wholly buffy or ochraceous (feathers nearly white at tips in midsummer plumage); *adult females* with white predominating on lower parts, and with a very conspicuous white superciliary stripe.

e^1. *Adult female* darker colored; lower parts with white and dusky in about equal amount, or else the latter predominating; chin and throat often tinged, more or less, with cream-color or buffy; lighter markings on upper parts less conspicuous.

Male: Length about 9.00–10.00, wing 4.60–5.05 (4.88), tail 3.55–3.95 (3.84), culmen .88–1.00 (.94), depth of bill at base .45–.50 (.49), tarsus 1.12–1.20 (1.14). *Female:* Length about 7.50–8.50, wing 3.80–4.25 (3.99), tail 3.10–3.40 (3.12), culmen .72–.80 (.79), depth of bill at base .40–.50 (.42), tarsus 1.00–1.05 (1.03). *Eggs* .98 × .69. *Hab.* Temperate North America in general, except western Mexico and lower Colorado Valley; north to Great Slave Lake, south to Costa Rica.

498. **A. phœniceus** (LINN.). **Red-winged Blackbird.**

e^2. *Adult females* lighter colored; lower parts with white decidedly prevailing over dusky; chin and throat often tinged with delicate pale pink, but not with buffy or cream-color; lighter markings on upper parts very conspicuous.

f^1. Larger, with smaller bill, and upper parts lighter colored. *Male:* Length about 9.00, wing about 5.05, tail 4.00, culmen .90, depth of bill at base .45, tarsus 1.20. *Female:* Prevailing color of upper parts light grayish brown (more clay-colored and much mixed with rusty in winter), the top of head narrowly streaked with dusky, but with scarcely any indication of lighter median stripe (often with none at all), the back and scapulars broadly streaked with dusky; length about 7.50–8.50, wing 4.00–4.25 (4.10), tail 2.95–3.20 (3.09), culmen .72–.85 (.78), depth of bill at base .38–.42 (.39), tarsus 1.00–1.12 (1.04). *Hab.* Northwestern Mexico and lower Colorado Valley, in southern California and

Arizona; south to Mazatlan...... 498*a*. **A. phœniceus longirostris** Salvad.[1] **Sonoran Red-wing.**

*f*². Smaller, with larger bill, and upper parts darker. *Male:* Length about 8.00–8.50, wing 4.50, tail 3.40–3.70 (3.55), culmen 1.00–1.05 (1.03), depth of bill at base .40–.42 (.41), tarsus 1.10–1.20 (1.15). *Female:* Ground-color above mixed grayish brown and rusty (the latter chiefly on back and scapulars), the top of head streaked with black and divided by a very distinct lighter median stripe; back and scapulars broadly streaked with black and buffy whitish; length about 6.50–7.00, wing 3.60–3.80 (3.67), tail 2.70–2.90 (2.81), culmen .75–.85 (.79), depth of bill at base .38–.40 (.39), tarsus .95–1.05 (.99). *Hab.* Bahamas and southern Florida (Miami, Key West, etc.)... 498*b*. **A. phœniceus bryanti** Ridgw. **Bahaman Red-wing.**[2]

*d*². *Adult males* with the middle wing-coverts more or less extensively black terminally, the basal portion buff or ochraceous (but usually concealed by lesser coverts); *adult females* with dusky largely prevailing on lower parts (often nearly uniform dusky), and with superciliary stripe not sharply defined (often very indistinct).

Male: Length about 9.00–10.00, wing 4.90–5.65 (5.17), tail 3.50–4.05 (3.83), culmen .81–1.02 (.89), depth of bill at base .40–.49 (.46), tarsus 1.20–1.30 (1.23). *Female:* Above nearly uniform brownish dusky, the top of head, back, and scapulars more or less distinctly streaked with paler, and the wing-feathers with narrow paler (sometimes whitish) edgings; lower parts brownish dusky, more or less distinctly streaked (never conspicuously) with dull brownish gray, the chin and throat pale buffy or pinkish, the latter marked with triangular spots of dusky, in longitudinal series; length about 7.50–8.50, wing 4.05–4.35 (4.21), tail 2.90–3.25 (3.04), culmen .75–.78 (.76), depth of bill at base .38, tarsus 1.05–1.10 (1.07). *Eggs* .95 × .68. *Hab.* Valleys of California and western Oregon, and south into Mexico.

499. **A. gubernator** (Wagl.). **Bicolored Blackbird.**

*c*². *Adult female* entirely uniform deep black, including lesser wing-coverts. (*Adult male* exactly like that of *A. phœniceus* in color.)

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[1] *Agelaius longirostris* Salvad., Atti del Reale Accad. Scienz. Torino, ix. April 26, 1874, 632 (western Mexico).

[2] New subspecies. The adult male is not appreciably different in plumage from either the common *A. phœniceus* or the Cuban *A. assimilis*, but differs in proportions from both. The National Museum possesses, besides Bahaman specimens, an adult male and a female from Miami, Florida (C. J. Maynard, collector), and an adult female from Key West ("Albatross" collection).

Male: Length about 8.50, wing 4.15–4.30, tail 3.30–3.60, culmen .92–.95, depth of bill at base .48, tarsus 1.10–1.15. *Female:* Length about 7.00, wing 3.70–3.80, tail 3.05–3.25. *Hab.* Cuba.

A. assimilis Gundl. **Cuban Red-wing.**[1]

*b*². *Adult male* glossy blue-black, the plumage with a soft silky texture, the lesser wing-coverts deep crimson or burnt-carmine, the middle coverts white (tinged with buff in winter plumage); *adult females* with the plumage very soft or silky in texture.

Adult male: Glossy blue-black, the lesser wing-coverts rich burnt-carmine, red posteriorly (next to white or pale buffy middle coverts), pure rich scarlet toward the shoulders); middle coverts white, more or less tinged with buff; *in winter*, feathers of back and under parts bordered terminally with dull light brown (not rusty), and middle wing-coverts more decidedly tinged with buff; length about 8.50–9.00, wing 4.70–4.90 (4.83), tail 3.50–3.85 (3.67), culmen .90–.98 (.93), depth of bill at base .38–.40 (.40), tarsus 1.10–1.20 (1.13). *Adult female:* Very similar in color to same sex of *A. gubernator*, but decidedly grayer in general cast of plumage (corresponding stages being compared), and texture of plumage decidedly softer or smoother;[2] length about 7.00–7.50, wing 4.10–4.40 (4.23), tail 2.95–3.60 (3.16), culmen .78–.82 (.80), depth of bill at base .31–.38 (.35), tarsus 1.00–1.08 (1.04). *Eggs* .94 × .67. *Hab.* Valleys of Pacific coast, from southern California to western Oregon.

500. **A. tricolor** (Nutt.). **Tricolored Blackbird.**

*a*². Wing exceeding tail by decidedly less than length of tarsus; sexes not appreciably different in color, the lesser wing-coverts (in both sexes) tawny ochraceous.

Plumage entirely glossy black, except lesser wing-coverts. *Male:* Length about 7.25, wing 4.00, tail 3.35, tarsus .95. *Female:* Length about 6.77. wing 3.80, tail 3.10, tarsus .90. *Hab.* Cuba.

A. humeralis (Vig.). **Vigors's Red-wing.**[3]

GENUS STURNELLA VIEILLOT. (Page 365, pl. CIV., fig. 1.)

Species.

Common Characters.—*Adult:* Above brownish or grayish, striped and barred with black; crown divided medially by a whitish or buffy stripe; side of head whitish, with a dusky streak behind eyes; throat and breast bright yellow; a black crescent on chest; flanks and under tail-coverts whitish, streaked with dusky;

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[1] *Agelaius assimilis* (Gundl. MSS.) Lemb., Aves de Cuba, 1850, 64, pl. 9, fig. 3.

[2] I have been unable to discover any infallible or positive difference in plumage between the females of *A. tricolor* and *A. gubernator*, except that in the *texture*, which can only be depended on as a test after one has become used to comparing specimens; the female of *A. gubernator* averages decidedly browner, however, with relatively shorter and stouter bill, usually more rounded tail, and slightly shorter tarsus.

[3] *Leistes humeralis* Vig., Zool. Jour. iii. 1828, 442. *Agelaius humeralis* Bonap., Consp. i. 1850, 430

lateral tail-feathers partly white. *Young:* Colors much duller, and markings less distinct; black mark on chest only faintly indicated. Length, males, about 9.50–11.00, females, 8.00–10.00. *Nest* on or embedded in ground, in meadows, composed of dried grasses, sometimes arched over on top. *Eggs* 3–7, white, speckled with reddish brown, blackish brown, and lilac-gray.

*a*¹. Yellow of throat not encroaching laterally on malar region; color darker and browner above, with heavier and more confluent black markings, the flanks and under tail-coverts distinctly buffy.

*b*¹. Larger, with larger bill and smaller feet. *Adult male:* Wing 4.40–5.00, (4.74), culmen 1.20–1.52 (1.29), tarsus 1.54–1.71 (1.63). *Adult female:* Wing 3.95–4.30 (4.11), culmen 1.04–1.17 (1.12), tarsus 1.40–1.49 (1.42). *Eggs* 1.09 × .80. *Hab.* Eastern North America (except Florida?), west to edge of Great Plains, north to Canada.

501. **S. magna** (Linn.). **Meadowlark.**

*b*². Smaller, with smaller bill and larger feet. *Adult male:* Wing 4.20–4.80 (4.40), culmen 1.13–1.30 (1.22), tarsus 1.50–1.72 (1.62). *Adult female:* Wing about 3.90–4.10, tail 2.70, culmen 1.05, tarsus 1.50. *Hab.* Eastern and central Mexico and south to Costa Rica; north to southern Texas (lower Rio Grande Valley) and southern Arizona; Florida?

501*a*. **S. magna mexicana** (Scl.). **Mexican Meadowlark.**

*a*². Yellow of throat spread laterally over the malar region; color paler and grayer above, with black markings less conspicuous, those on tertials and middle tail-feathers in form of isolated narrow bars, not connected along the shaft, as is usual in *magna* and *mexicana;* flanks and lower tail-coverts white, very faintly, if at all, tinged with buff.

Adult male: Wing 4.85–5.30 (5.01), culmen 1.20–1.36 (1.29), tarsus 1.50–1.60 (1.54). *Adult female:* Wing 4.30–4.60 (4.41), culmen 1.10–1.22 (1.17), tarsus 1.33–1.43 (1.41). *Eggs* 1.12 × .81. *Hab.* Western North America, north to British Columbia and Manitoba, east regularly to Dakota, Nebraska, Kansas, and Texas, sparingly to Illinois and Wisconsin; south through western Mexico.

501*b*. **S. magna neglecta** (Aud.). **Western Meadowlark.**[1]

GENUS ICTERUS Brisson. (Page 366, pl. CII., figs. 1–3.)

Species.

*a*¹. Depth of bill at base decidedly less than half the length of the exposed culmen.

*b*¹. Bill not decurved terminally. (Subgenus *Icterus.*)

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[1] Without much doubt a distinct species. The occurrence of both *S. neglecta* and *S. magna* together in many portions of the Mississippi Valley, each in its typical style (the ranges of the two overlapping, in fact, for a distance of several hundred miles), taken together with the excessive rarity of intermediate specimens and the universally attested radical difference in their notes, are facts wholly incompatible with the theory of their being merely geographical races of the same species.

c^1. Feathers of throat slenderly lanceolate; orbits naked.

Adult (sexes alike): Head, neck, chest, back, scapulars, wings, and tail uniform black; middle and part of greater wing-coverts, and broad edgings to secondaries, white; rest of plumage, including lesser wing-coverts and broad collar across hind-neck, yellow or orange; length about 9.00–10.00, wing 4.10–5.00, tail 3.80–4.30, culmen 1.25–1.50, tarsus 1.25–1.35. *Hab.* Caribbean coast of South America; West Indies (introduced?); accidental at Charleston, South Carolina:

502. **I. icterus** (LINN.). **Troupial.**

c^2. Feathers of throat normal (short and blended); orbits feathered.

d^1. Tail shorter than wing, graduated for less than length of culmen.

Adult male: Head, neck, chest, breast, back, scapulars, greater wing-coverts, secondaries, primaries, and terminal (or subterminal) portion of tail (including nearly whole length of middle feathers) uniform deep black; tips of greater wing-coverts and tail-feathers (except middle pair), and narrow edgings to quills and secondaries (sometimes worn off), white; rest of plumage bright lemon-yellow (duller in younger birds), the middle wing-coverts fading into whitish at tips. *Adult female:* Above olive-greenish, the back and wings grayer, the first with more or less distinct dusky shaft-streaks; middle and greater wing-coverts broadly tipped with white, forming two distinct bands; tail dull olive terminally and on middle feathers, the rest olive-yellow; lower parts entirely olive-yellow. *Young male:* Variously intermediate in plumage between the adult male and female, according to age. *Young of year:* Similar to adult female, "but with all the wing-feathers edged and tipped with white, the wing-bands yellowish, the tail tipped with yellow, the breast obscured by brownish, and the yellow of the under parts paler and greener." (BREWST.) Length about 7.70–8.50, wing 3.80–4.20, tail 3.30–3.90, culmen .95–1.00, tarsus .90–.95. (Female averaging smaller than male.) *Nest* pensile or semi-pensile, usually built in yuccas, composed of fibres of the yucca, dried grasses, etc., lined with softer materials. *Eggs* 2–4, .94 × .67, bluish white, speckled and finely pencilled round larger end with black, and faintly clouded with lilac-gray. *Hab.* Central Mexico, and north to southern border of United States (southern Texas to southern California); Lower California........ 504. **I. parisorum** BONAP. **Scott's Oriole.**

d^2. Tail longer than wing, graduated for much more than length of culmen. (*Adult* with head, upper neck, chest, wings, except lesser and middle coverts, and tail, black; rest of plumage yellow, more or less tinged with olive-greenish on upper surface.)

e^1. Scapulars entirely olive-greenish or yellowish, like back; middle wing-coverts yellow; outer webs of greater wing-coverts tipped with whitish (sometimes inclining, more or less, to yellow or grayish), and tertials broadly edged with same. *Young:* Without any black, the upper parts entirely olive-green, the lower parts wholly yellow, tinged laterally with olive. Length about 8.75–10.50, wing 3.75–4.25, tail. 4.15–4.40, culmen .90–1.10, tarsus .95–1.10. *Nest* semi-pensile, fastened usually between upright twigs, composed of dried grasses, etc. *Eggs* .99 × .71, white, finely speckled or "dusted," chiefly on larger end, with brown, usually mixed with stains of lilac-gray. *Hab.* Central and northern Mexico, north to lower Rio Grande Valley in Texas.

503. I. audubonii GIRAUD. **Audubon's Oriole.**

e^2. Scapulars and middle wing-coverts partly (sometimes entirely) black; wings without any white markings; otherwise very similar to *I. audubonii*, but averaging a little smaller. *Hab.* Southern Mexico (tierra caliente) north to Vera Cruz.

I. melanocephalus (WAGL.). **Black-headed Oriole.**[1]

b^2. Bill distinctly decurved terminally.

c^1. Tail longer than wing, graduated for at least as much as length of tarsus; *adult males* yellow, or orange, and black.

d^1. Tail graduated for much more than length of tarsus; adults with entire head and neck black. (*Adult males:* Head, neck, chest, back, scapulars, wings, except lesser and middle coverts, upper tail-coverts, and tail, uniform deep black; rest of plumage yellow, or orange, the lower tail-coverts sometimes black. *Adult females* similar, but colors duller. *Young males:* The black first appearing on wings, chest, throat, cheeks, and forehead, the black of head and neck at one stage occupying precisely the same area as in adult male of *I. cucullatus*. *Older:* Head, nape, fore-part and sides of neck, and chest entirely black, but lower hind-neck, back, and scapulars olive-yellow, like lower back and rump.[2] *Still older:* Similar to the last, but back and scapulars mixed with black. *Young of year:* Without any black, the upper parts dull olive, duller and browner on back, the wings and middle tail-feathers dusky, with olivaceous edgings, rest of tail-feathers olive, with yellowish edges, and lower parts entirely light yellow, tinged with olive laterally and across chest.)

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[1] *Psarocolius melanocephalus* WAGL., Isis, 1829, 756. *Icterus melanocephalus* HAHN & KUSTER, Vög. aus Asien. Lief. vi. 2, pl. 3.

[2] In this stage exactly resembling *in coloration* the fully adult plumage of *I. melanocephalus* and *I. audubonii*, except that the secondaries, etc., lack the white edgings of the latter, while in *I. wagleri* the tail-coverts are black.

e^1. Larger (wing 3.85, or more). *Adult* with tail-coverts entirely black; greater wing-coverts abruptly white at base (this concealed by middle coverts, however); length about 8.80–9.50, wing 3.85–4.25, tail 4.00–4.60, culmen .90–1.00, tarsus .90–1.00. *Hab.* Mexico and Guatemala, north to Mexican side of Rio Grande.

I. wagleri Scl. **Wagler's Oriole.**[1]

e^2. Smaller (wing not more than 3.55). *Adult* with tail-coverts chiefly (sometimes entirely?) yellow; greater wing-coverts black to extreme base; upper part of breast sometimes with more or less of chestnut next to black of chest; wing 3.25–3.55, tail 3.50–4.00. *Hab.* Southern Mexico, and south to Costa Rica.

I. prosthemelas (Strickl.). **Strickland's Oriole.**[2]

d^2. Tail graduated for not more than length of tarsus; *adult males* with black of head and neck confined to frontlet, lores, cheeks, malar region, chin, throat, and chest; wing with two white bands. (*Adult males:* Back, scapulars, wings, and tail black, the wings with white markings; other portions yellow, orange, or orange-red. *Adult females:* Above light olive-greenish, more grayish on back; wings dusky grayish, with lighter brownish gray edgings, the middle and greater coverts tipped with white; tail yellowish olive; lower parts entirely yellow, tinged with olive on flanks, etc. *Young males, second year:* Similar to adult females, but chin, throat, chest, malar region, and lores black more or less continuously, as in adult. *Young in first year:* Similar to adult female, but colors paler and duller, the plumage generally, especially on upper parts, suffused with pale brownish. Length 6.50–8.50, wing 3.30–3.60, tail 3.50–4.20.)

e^1. *Adult males* with breast, etc., orange or orange-red.

f^1. *Adult male* with breast, etc., orange or dull orange-red. *Nest* usually composed of the "Spanish" moss (*Tillandsia*), often built inside of hanging tufts or tresses of this parasite. *Eggs* 3–5, .85 × .60, white, speckled, chiefly on larger end, with hair-brown, usually mixed with a few small black specks or lines. *Hab.* Southern and eastern Mexico, north to lower Rio Grande Valley in Texas.

505. **I. cucullatus** Swains. **Hooded Oriole.**

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[1] *Icterus wagleri* Scl., P. Z. S. 1857, 7.

[2] *Xanthornus prosthemelas* Strickl., Contr. Orn. 1850, 120, pl. 62. *Icterus prosthemelas* Scl., P. Z. S. 1856, 301.

*f*². *Adult male* with breast, etc., intense orange-red, sometimes almost scarlet. *Hab.* Yucatan.

I. cucullatus igneus RIDGW. **Fiery Oriole.**[1]

*e*². *Adult male* with breast, etc., saffron-yellow, varying to gamboge (never orange). *Nest* exceedingly variable in form and composition, but usually pensile or semipensile, and composed of grass-stems (often green) and various plant-fibres. *Eggs* .85 × .61, averaging with decidedly darker and heavier markings than those of true *I. cucullatus*. *Hab.* Western Mexico, north to Arizona, Lower California, and southern California.. 505*a*. **I. cucullatus nelsoni** RIDGW. **Arizona Hooded Oriole.**

*c*². Tail shorter than wing (the latter less than 3.25), graduated for much less than length of tarsus; *adult male* chestnut and black.

Adult male: Head, neck, middle of chest, back, scapulars, wings (except lesser and middle coverts), and tail deep black, the greater wing-coverts, quills, and secondaries edged, more or less distinctly, with pale chestnut or whitish; rest of plumage uniform rich dark chestnut or bay, deepest on breast. *Adult female:* Upper parts yellowish olive, much duller and grayer on back and scapulars; wings grayish dusky, with two white bands, all the feathers with paler brownish gray edgings; tail yellowish olive, like rump, etc.; lower parts entirely light olive-yellow. *Young male, second year:* Similar to adult female, but lores, chin, and throat black. (The chestnut and rest of the black appearing in patches, increasing in extent, during successive seasons.) *Young of year:* Similar to adult female, but suffused with brownish, especially on upper parts. Length 6.00–7.25, wing 2.90–3.25, tail 2.65–3.20. *Nest* composed of green wiry grass-stems, interwoven into a firm basket-like structure usually supported between upright twigs near the extremity of a branch (but sometimes partly pendulous), lined with softer materials. *Eggs* 3–6, .81 × .57, pale bluish, bluish white, or greenish white, speckled and "pen-lined" with brown and black, usually mixed more or less with lilac-gray. *Hab.* Eastern United States, west to Great Plains; south, in winter, through Middle America to Panama.

506. **I. spurius** (LINN.). **Orchard Oriole.**

*a*². Depth of bill at base equal to half the length of the exposed culmen. (Subgenus *Yphantes* VIEILLOT.)

*b*¹. Wing usually not more than 3.80, tail not more than 3.15; *adult male* with whole head black, lesser wing-coverts wholly orange or yellow, white of wings confined to tips of greater coverts and narrow edgings of quills and secondaries (the middle coverts sometimes whitish), and tail black across middle portion.

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[1] *Icterus cucullatus igneus* RIDGW., Pr. U. S. Nat. Mus. viii. April 20, 1885, 19.

Adult male: Head, neck, middle line of chest, back, scapulars, wings (except lesser and middle coverts), and greater part of tail black; broad tips to greater wing-coverts, and narrow edgings to some of the quills and secondaries (these sometimes worn away), white; rest of plumage, including lesser and middle wing-coverts, base and tip of tail (except middle feathers—but on outer feathers occupying nearly half their total length), rich cadmium-orange, sometimes varying to intense orange-red, very rarely to lemon-yellow. *Adult female:* Very variable in color, but usually (?) with upper parts olive, indistinctly streaked or spotted with black, the wings dusky, with two white bands, and light grayish edges to most of the feathers; rump dull ochraceous-orange; tail duller, more olivaceous, orange; lower parts dull orange, paler on flanks, the throat usually with more or less admixture of black. [*Note.*—The adult female often has the black pattern of head, neck, and back as in male, but the color much duller and less uniform. The young male also varies between the two extremes (adult male and female) as described above, and cannot in any stage be with certainty distinguished from the adult female except by dissection.] *Young of year:* Similar to adult female, as described above, but colors softer and more blended, and upper parts suffused with brownish. Length about 7.00–8.15, wing 3.50–3.90, tail 2.85–3.35. *Nest* more or less purse-shaped and pensile, suspended from extremity of drooping branches, composed of various textile substances, as various natural plant-fibres, strings, etc., compactly interwoven, the nest proper composed of softer materials arranged within the supporting pouch. *Eggs* 3–6, .91 × .61, dull white, greenish white, or brownish white, curiously streaked or irregularly "pen-lined" with brown and black, sometimes mixed with brown spots or stains. *Hab.* Eastern North America, north to New England, Ontario, and the Saskatchewan, west across Great Plains; south, in winter, through eastern Mexico and Central America to Panama.

507. **I. galbula** (LINN.). **Baltimore Oriole.**

b^2. Wing not less than 3.80 (in adult), tail not less than 3.10 (averaging decidedly more); *adult males* with whole malar region yellow or orange, an orange streak over lores (sometimes prolonged into a superciliary stripe), lesser wing-coverts entirely, or for the greater part, black, white of wings covering whole of middle and outer webs of greater coverts, besides very broad edges to tertials and secondaries, and tail yellow or orange, with middle feathers and tips of the others black.

c^1. *Adult male:* Forehead, distinct superciliary stripe, ear-coverts, sides, and flanks yellow or orange; lower back, rump, and upper tail-coverts yellow or orange, more or less tinged with olive. *Adult female:* Top of head and hind-neck yellowish olive, becoming brighter yellowish (sometimes distinctly orange or yellow) on forehead and superciliary region; back olive-grayish, streaked with black; wings dusky, the middle coverts white, the greater coverts tipped with white and broadly edged with light grayish, the other quills and secondaries also edged with light grayish; lower back light olive-grayish; rump, upper tail-coverts, and tail bright yellowish olive, sometimes inclining to ochraceous-orange; sides of head, with anterior lower parts, dull orange or orange-yellow, the throat usually with more or less of black; flanks (sometimes sides and belly also) pale dull grayish; under tail-coverts light yellowish. *Young male in second year*, similar to adult female. *Young of year:* Similar to adult female, but colors paler and duller, suffused more or less with pale brownish, and no trace of black on throat (and yellow sometimes almost wanting). Length 7.50–8.60, wing 3.80–4.15, tail 3.10–3.70. *Nest* and *eggs* hardly distinguishable from those of *I. galbula*, the latter, however, averaging slightly larger (.94 × .63). *Hab.* Western United States, east to and including Rocky Mountains; south, in winter, into Mexico.

508. **I. bullocki** (Swains.). **Bullock's Oriole.**

c^2. *Adult male:* Forehead, superciliary region, ear-coverts, sides, flanks, lower back, rump, and upper tail-coverts black. *Adult female:* "Above gray, mixed with yellowish and variegated with black; wings blackish, edged with white; below yellowish, middle of belly whitish, flanks grayish; tail yellowish olivaceous, with darker tips." Wing 4.20, tail 3.20–3.50. *Hab.* Central and southern Mexico.

I. abeillei (Less.). **Abeille's Oriole.**[1]

Genus SCOLECOPHAGUS Swainson. (Page 366, pl. CIV., fig. 2.)

Species.

Common Characters.—*Adult males* uniform black, more or less glossy; *females* uniform brownish gray or slaty. *Nest* a bulky structure of dried twigs, shreds of bark, mosses, etc., placed in trees. *Eggs* 2–8, pale bluish green, pale olive, or dull rusty brownish, variously speckled, spotted, or blotched with brown (sometimes nearly uniform deep rusty brown).

a^1. Bill slender, its depth through base much less than half the lateral length of lower mandible. *Adult male in summer:* Uniform glossy black, with a faint dark bluish gloss on head and neck and of bluish green elsewhere. *Adult male in winter:* The black more or less extensively overlaid by rusty brown above and buffy below. *Adult female in summer:* Uniform dusky brownish slate, without gloss, the lower parts inclining to plumbeous. *Adult female*

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[1] *Xanthornus abeillei* Less., Rev. Zool. 1839, 101. *Icterus abeillii* Scl., P. Z. S. 1860, 252.

in winter: Much washed or overlaid by rusty on upper and buffy on lower parts. *Young:* Similar to winter female, but colors duller and more uniform, and texture of plumage looser. Length 8.20–9.75, wing 4.25–4.75, tail 3.65–4.20. *Eggs* .98 × .72. *Hab.* Eastern and northern North America, west to Bering's Sea and Great Plains; breeding from northern United States northward........................ 509. **S. carolinus** (Müll.). **Rusty Blackbird.**

x^2. Bill stout, its depth through base nearly equal to half the lateral length of lower mandible. *Adult male in summer:* Uniform glossy greenish black, the head and neck glossy violet-black. *Adult male in winter:* Similar to summer plumage, but head, neck, back, and breast more or less—generally very slightly—obscured by grayish brown tips to feathers. *Adult female:* Uniform brownish slate, more brownish anteriorly, posteriorly more slaty, and with a soft, silky gloss. Length 8.75–10.25, wing 4.65–5.25, tail 3.85–4.50. *Eggs* 1.00 × .73. *Hab.* Western North America, east to Great Plains (occasionally to Illinois, etc.), north to the Saskatchewan, south to table-lands of Mexico................ 510. **S. cyanocephalus** (Wagl.). **Brewer's Blackbird.**

Genus **QUISCALUS** Vieillot. (Page 366, pl. CIII., figs. 1, 2.)

Species.

Common Characters.—*Adult males:* Uniform glossy blackish, often with varied metallic hues. *Adult females:* Decidedly smaller than males, the colors duller (sometimes markedly different).

a^1. Tail not decidedly longer than wing (usually decidedly shorter); *adult males* with varied rich metallic tints (the head and neck rich, silky steel-blue, violet, or brassy green); *adult females* similar, but duller. *Nest* a coarse and bulky but compact structure composed of coarse dried grasses, built in trees (often in cavities). *Eggs* 3–7, pale green or greenish blue, pale olive, or dull olive-whitish, coarsely spotted and irregularly lined with brown and black (sometimes dull rusty brown, marked with darker). (Subgenus *Quiscalus.*)

b^1. Plumage of body, above and below, with mixed metallic tints (usually several on each feather, especially on back and scapulars), the color of head and neck usually not abruptly defined against the color of the body; wing-coverts usually with mixed metallic tints; wings and tail usually bluish violet or bluish.

c^1. Larger, with smaller bill; length about 11.00–13.50, wing (male) 5.45–6.05 (5.71), tail 5.05–5.70 (5.46), graduation of tail 1.00–1.60 (1.26), exposed culmen 1.13–1.23 (1.17), tarsus 1.35–1.45 (1.40). *Female:* Length about 11.00–11.50, wing about 5.00, tail about 4.80. *Eggs* 1.12 × .82. *Hab.* Atlantic coast of United States (except southern Florida), north to Massachusetts, west to eastern Tennessee.
511. **Q. quiscula** (Linn.). **Purple Grackle.**

c^2. Smaller, with larger bill; length about 10.40–12.00, wing (male) 5.20–

5.40 (5.29), tail 4.60–5.20 (4.93), graduation of tail 1.00–1.35 (1.10), exposed culmen 1.19–1.30 (1.24), tarsus 1.35–1.47 (1.40). *Eggs* 1.20 × .82. *Hab.* Florida (chiefly southern portion), and west along Gulf coast to Louisiana.

511*a*. **Q. quiscula aglæus** (BAIRD). **Florida Grackle.**

b^2. Plumage of body, above and below, perfectly uniform brassy olive or bronze, never with mixed tints, and always very abruptly defined against the color (steel-blue, violet, purple, or brassy green) of neck; wing-coverts never with mixed metallic tints; wings and tail always purplish or violet-purplish, never bluish.

Length (male) about 12.00–13.50, wing 5.45–5.95 (5.65), tail 5.25–5.90 (5.52), graduation of tail 1.15–1.60 (1.36), exposed culmen 1.12–1.26 (1.17), tarsus 1.40–1.46 (1.44). *Female:* Length about 11.00–11.50, wing 5.00–5.05, tail 4.80–4.90. *Eggs* 1.14 × .82. *Hab.* Eastern North America, west of Alleghanies, including whole of New England (except coast of Long Island Sound); north to Hudson's Bay, west to Rocky Mountains, south to Louisiana (?) and Texas; occasionally east of Alleghanies, from Virginia northward.

511*b*. **Q. quiscula æneus** (RIDGW.). **Bronzed Grackle.**[1]

a^2. Tail decidedly longer than wing; *adult males* without varied metallic tints, the plumage being uniform glossy blue-black, or dark steel-blue, becoming gradually more purplish anteriorly, or greenish, changing anteriorly to blue; *adult females* exceedingly different from males, being very much smaller, the plumage dusky brownish above, light brownish beneath. *Nest* a very bulky structure of dried grasses, Spanish moss, etc., usually compacted together with an internal plastering or stiffening of mud, built in low trees, or bushes, in swampy situations. *Eggs* 3–5, ovate or conic-ovate, pale bluish or greenish, pale drab, pale olive, dull purplish gray, etc., grotesquely lined with black and brown. (Subgenus *Megaquiscalus* CASSIN.)

b^1. Bill stouter (greatest depth at base of gonys more than .40 in male, .35, or more, in female), the tip decidedly decurved; *adult females* dull dusky brown above, the lower parts similar posteriorly, becoming paler anteriorly; no distinct superciliary stripe.

c^1. *Adult male* with tail 8.30, or more.

Adult male with metallic gloss violet over all anterior portions, including whole back, scapulars, lesser wing-coverts, and all of lower parts except flanks and under tail-coverts; length 17.00–18.75, wing 7.35–8.00 (7.59), tail 8.30–9.35 (8.80), exposed culmen 1.47–1.69 (1.60). *Adult female:* Above dusky brown, with a metallic greenish gloss, becoming more decidedly brown and less glossy on head and neck; superciliary stripe (sometimes indistinct) and lower parts dull fulvous-brown, becoming more buffy on chin and throat and dusky on flanks and under tail-coverts; length about 11.50–13.50, wing 5.70–6.50 (5.94), tail 5.40–6.30 (5.98), exposed culmen 1.20–1.42 (1.34). *Eggs* 1.27 × .86. *Hab.* Eastern Mexico, north to southern Texas, south to Nicaragua.

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[1] With scarcely a doubt, a distinct species from *Q. quiscula.*

512. **Q. macrourus** Swains. **Great-tailed Grackle.**

*c*². *Adult male* with tail not more than 7.50.

*d*¹. Plumage (both sexes) essentially as in *Q. macrourus*, but size very much less.

Adult male: Length 14.00–15.70, wing 6.25–7.05 (6.62), tail 6.20–7.60 (6.92), exposed culmen 1.36–1.43 (1.40). *Adult female:* Length about 11.00–11.75, wing 5.15–5.50 (5.32), tail 4.80–5.20 (5.00), exposed culmen 1.15–1.18 (1.17). *Hab.* Western Mexico (north to mouth of Colorado River?).

Q. graysoni Scl. **Grayson's Grackle.**[1]

*d*². *Adult male* with metallic gloss greenish, changing through steel-blue on back, scapulars, lesser wing-coverts, and lower breast to violet on head, neck, chest, and upper breast; length about 15.00–17.50, wing 7.00–7.50 (7.22), tail 6.80–7.55 (7.14), exposed culmen 1.48–1.68 (1.59). *Adult female:* Similar in color to same sex of *Q. macrourus*, but lighter and more tawny beneath, and much browner above, the head and neck of an umber tint; length about 11.50–13.00, wing 5.55–5.75 (5.61), tail 5.10–5.55 (5.31), exposed culmen 1.14–1.30 (1.24). *Eggs* 1.24 × .89. *Hab.* South Atlantic and Gulf coast of United States, north to Virginia, west to Texas.

513. **Q. major** Vieill. **Boat-tailed Grackle.**

*b*². Bill more slender (greatest depth, at base of gonys, not more than .35 in male or .30 in female; *adult female* with top of head, hind-neck, and upper back bright rusty brown, the lower parts bright tawny, becoming buffy on belly and dusky on flanks and under tail-coverts.

Adult male: "Uniform dark purplish black, with slight metallic reflections; wings and tail dark shining black . . . length 13 inches, wing 6.7; tail, middle rectrice 7, external 4.3." *Adult female:* Length about 10.00–10.50, wing 5.20, tail 4.40–5.10, exposed culmen 1.12. *Hab.* Central Mexico.

Q. tenuirostris Swains. **Slender-billed Grackle.**[2]

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[1] *Quiscalus palustris* "Swains.," of authors, but not of Swainson. *Quiscalus graysoni* Scl., Cat. B. Brit. Mus. xi. 1886, 307.

[2] *Quiscalus tenuirostris* Swains., An. in Menag. 1838, 299.

Family FRINGILLIDÆ.—The Finches, Sparrows, etc. (Page 321.)

Genera.

- a^1. Mandibles falcate, crossed at tips.................................. **Loxia.** (Page 392.)
- a^2. Mandibles not falcate nor crossed at tips.
  - b^1. Conspicuously crested.
    - c^1. Culmen strongly curved, and cutting-edge of upper mandible deeply sinuated or concave in middle portion.. **Pyrrhuloxia.** (Page 443.)
    - c^2. Culmen only slightly curved, and cutting-edge of upper mandible more or less convex in middle portion............ **Cardinalis.** (Page 441.)
  - b^2. Not crested.
    - c^1. Width of bill at base equal to its length, and basal outline of lower mandible, underneath, doubly concave............ **Pyrrhula.** (Page 388.)
    - c^2. Width of bill at base decidedly less than its length, and basal outline of lower mandible, underneath, simply concave.
      - d^1. Depth of bill at base greater than length of hind-toe, with claw, and more than three-fourths as long as tarsus. **Coccothraustes.** (Page 386.)
      - d^2. Depth of bill at base less than length of hind-toe, with claw, and less than two-thirds as long as of tarsus.
        - e^1. Nasal plumules covering nearly basal half of upper mandible. **Pinicola.** (Page 387.)
        - e^2. Nasal plumules covering very much less than basal half of upper mandible.
          - f^1. Base of gonys midway between tip and lateral base of lower mandible........... **Plectrophenax.** (Page 402.)
          - f^2. Base of gonys decidedly nearer to lateral base than tip of lower mandible.
            - g^1. Gonys slightly convex; a light brownish spot or speculum at base of quills.. **Passer.** (Page 401.)
            - g^2. Gonys not appreciably convex; no light spot or speculum at base of quills.
              - h^1. Primaries exceeding secondaries by more than length of tarsus.
                - i^1. Wing at least five times as long as tarsus.
                  - j^1. Wing less than 3.50.
                    - k^1. Tail three-fourths as long as wing; nasal tufts conspicuous. **Acanthis.** (Page 395.)
                    - k^2. Tail less than two-thirds as long as wing; nasal tufts inconspicuous.
                      - l^1. Exposed culmen decidedly shorter than tarsus; adults without red on head, and

with under parts either yellow or else conspicuously streaked. **Spinus.** (Page 398.)

l^2. Exposed culmen not decidedly, if at all, shorter than tarsus; adults with front part of head (all round) red, and lower parts neither yellow nor streaked. **Carduelis.** (Page 400.)

j^2. Wing more than 3.75...... **Leucosticte.** (Page 393.)

i^2. Wing less than five times as long as tarsus.

j^1. First quill decidedly longer than fourth.

k^1. Depth of bill at base equal to or greater than length of exposed culmen. **Carpodacus.** (Page 389.)

k^2. Depth of bill at base decidedly less than length of exposed culmen.

l^1. Tail emarginate, the middle feathers narrow and pointed at tip.

m^1. Gonys shorter than hind-toe (without claw) and less than depth of bill. **Calcarius.** (Page 404.)

m^2. Gonys longer than hind-toe (without claw) and greater than depth of bill. **Rhynchophanes.** (Page 406.)

l^2. Tail rounded, the middle feathers broad and rounded at tip. **Chondestes.** (Page 414.)

j^2. First quill decidedly shorter than fourth. **Habia.** (Page 444.)

h^2. Primaries exceeding secondaries by less than length of tarsus.

i^1. Depth of bill at base equal to length of hind-toe, with claw.... **Guiraca.** (Page 445.)

i^2. Depth of bill at base much less than length of hind-toe, with claw.

- *j*¹. Tail-feathers narrow, the middle ones, at least (sometimes all), acuminate.
  - *k*¹. Distance from bend of wing to tips of longest greater wing-coverts greater than from latter point to tip of longest quill. **Spiza.** (Page 451.)
  - *k*². Distance from bend of wing to tips of longest greater wing-coverts less than distance from latter point to tip of longest quill.
    - *l*¹. Middle toe, with claw, decidedly shorter than tarsus. **Poocætes.** (Page 406.)
    - *l*². Middle toe, with claw, not shorter than tarsus.... **Ammodramus.** (Page 407.)
- *j*². Tail-feathers broader, not acuminate.
  - *k*¹. Wing more than 2.25.
    - *l*¹. Hind-claw decidedly longer than its digit.
      - *m*¹. Bill tapering very rapidly to the acute tip, the cutting-edge of upper mandible distinctly convex or lobed toward base; nostrils concealed by small antrorse feathers.......... **Passerella.** (Page 433.)
      - *m*². Bill tapering gradually to the rather obtuse tip, the cutting-edge of the upper mandible not convex or lobed toward base; nostrils exposed. **Pipilo.** (Page 435.)
    - *l*². Hind-claw not longer than its digit.
      - *m*¹. Tertials elongated much beyond secondaries, nearly equalling longest primaries. **Calamospiza.** (Page 452.)

m^2. Tertials scarcely, if at all, longer than secondaries, and much shorter than longest primaries.

- n^1. Outer tail-feather largely (sometimes wholly) white .... **Junco.** (Page 422.)
- n^2. Outer tail-feather with little or no white.
  - o^1. Lower mandible much deeper than upper; adult males very brightly colored, with more or less of blue in plumage. **Passerina.** (Page 446.)
  - o^2. Lower mandible not deeper than upper; adult males not brightly colored, and without any blue in plumage.
    - p^1. Tail plain blackish or dusky, with or without whitish edging to outer feathers........ **Amphispiza.** (Page 425.)
    - p^2. Tail brownish, grayish, or olive-greenish, usually without markings.
      - q^1. Tail olive-green; first quill much shorter than secondaries. **Arremonops.**[1] (Page 434.)
      - q^2. Tail brownish or grayish; first quill not shorter than secondaries.
        - r^1. Primaries exceeding secondaries by more than length of exposed culmen; distance between tip of outer and middle (or longest) tail-feathers much less than length of hind-toe, without claw.
          - s^1. Tail more or less rounded, the middle feathers longest, or equal to longest; wing 3.00, or more...... **Zonotrichia.** (Page 414.)
          - s^2. Tail emarginate or double-rounded, the middle feathers shorter than the longest; wing less than 3.00. **Spizella.** (Page 417.)
        - r^2. Primaries exceeding secondaries by not more than length of exposed culmen; distance

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[1] New genus. Type, *Embernagra rufivirgata* Lawr.

between tip of outer and middle (longest) tail-feathers equal to or greater than length of hind-toe, without claw.

s^1. Tail double-rounded, but outer feathers much shorter than middle pair; graduation of tail less than length of exposed culmen, and tail exceeding wing by much less than length of bill from nostril... **Melospiza.** (Page 430.)

s^2. Tail simply, but very much, rounded, the middle feathers longest or equal to longest, its graduation greater than length of exposed culmen; or else tail exceeding wing by more than length of bill from nostril. **Peucæa.** (Page 427.)

k^2. Wing less than 2.25.

l^1. Culmen strongly curved; bill broad as high at base. **Sporophila.** (Page 449.)

l^2. Culmen nearly straight; bill much narrower than high at base .... **Euetheia.** (Page 450.)

GENUS **COCCOTHRAUSTES** BRISSON. (Page 382, pl. CV., fig. 1.)

Species.

a^1. Tips of four innermost primaries much widened at end, the inner webs emarginate at tips, the outer webs somewhat recurved, or semifalcate. (Subgenus *Coccothraustes.*[1])

a^2. Tips of four inner primaries of normal form. (Subgenus *Hesperiphona* BONAP.)

b^1. *Adult male* with head smoky olive, relieved by a yellow frontal crescent and blackish patch on crown; *adult female* with crown dull grayish brown, throat bordered along each side by a blackish streak, and upper tail-coverts tipped with white.

Adult male: Crown blackish, bordered anteriorly and laterally by a yellow patch covering forehead and superciliary region; rest of head, with neck and back, uniform deep olivaceous, changing gradually to yellow on scapulars and posterior portions of body, above and below; wings, tail, and upper tail-coverts black; tertials uniform dull white, the secondaries and inner webs of tail-feathers sometimes tipped with the same. *Adult female:* Whole top of head dull brownish or brownish-gray; rest of head, with neck and most of the body, lighter grayish, tinged more or less with olive-yellow, the throat bordered along each side by a dusky streak; a whitish patch at base of inner primaries. *Young:* Similar to adult female, but colors much duller and more brownish, with markings less sharply defined, the dusky streak on sides of throat sometimes nearly obsolete; lower parts paler and more buffy, with little or none of gray; bill dull horn-color, or brownish instead of yellowish green. Length about 7.00–8.50, wing 4.20–4.50, tail 2.75–3.20, culmen .75–.80, depth of bill at base .55–.70. *Hab.* Western North America, north to British Columbia and the Saskatchewan; east (irregularly, in winter) to Michigan, Wisconsin, Illinois, and Iowa; casually to Ohio and Ontario; south over table-lands of Mexico to highlands of Vera Cruz.

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[1] The typical subgenus not represented in America.

(57.) 514. **C. vespertinus** (Coop.). **Evening Grosbeak.**

b^2. *Adult male* with head entirely black; *adult female* with top of head black (sharply defined), no dusky streak on sides of throat, and upper tail-coverts without white tips. *Hab.* Highlands of Guatemala and southern Mexico.

C. abeillii (Less.). **Abeille's Grosbeak.**[1]

Genus PINICOLA Vieillot. (Page 382, pl. CV., fig. 2.)

Species.

Common Characters.—*Adult males:* General color dull rose-pink or madder-pink (rarely varying to a light vermilion tint), changing to ash-gray on scapulars, flanks, belly, and under tail-coverts, the plumage everywhere being of this color beneath the surface; scapulars and feathers of back dusky centrally, causing a spotted appearance; wings and tail dusky, the middle and greater coverts broadly tipped with white (this sometimes tinged with pink) and tertials broadly edged with same; secondaries, primaries, and tail-feathers narrowly edged with light grayish. *Adult females* with wings and tail as in the male, but rest of plumage grayish, without any red, but changing to a more or less bright olive-tawny tint on head and lower rump, the breast sometimes tinged with same. *Young:* Similar to adult female, but colors duller and more blended, the wing-bands dull buffy instead of pure white, and texture of plumage very different. [*Note.*—Apparently adult males are occasionally found in which the plumage is not distinguishable from that of the female; in others, the general plumage is that of the female, except that the olivaceous or tawny color on head, etc., is replaced by a more reddish tint (varying from light dull orange-red to deep madder-brown).] *Nest* a rather flat thin structure, of fine rootlets, etc., in coniferous trees. *Eggs* greenish or bluish, spotted with brown and blackish.

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[1] *Guiraca abeillii* Less., Rev. Zool. 1839, 41. *Coccothraustes abeillii* Scl. & Salv., Ibis, 1859, 19.

*a*¹. Smaller (wing not more than 4.30, and averaging less than 4.28), with relatively larger bill and shorter tarsi, and colors much duller, the females with plumage chiefly olivaceous.

Length about 8.00–8.50, wing 4.20–4.30 (4.25), tail 3.60–3.70 (3.65), exposed culmen .55–.65 (.61), tarsus .80–.90 (.84). *Hab.* Northern Europe and Asia.

P. enucleator (Linn.). **Pine Grosbeak.**[1]

*a*². Larger (wing very rarely less than 4.30, and averaging more than 4.40), with relatively smaller bill and longer tarsi, and colors much brighter, the females with plumage usually chiefly grayish.

*b*¹. Larger, with proportionally much smaller bill and longer tail; length 8.25–9.00, wing 4.50–5.00 (4.68), tail 3.70–4.45 (4.10), exposed culmen .53–.59 (.56), tarsus .87–.92 (.90). *Eggs* 1.01 × .74, deep greenish blue or bluish green, rather sparingly spotted with dark brown and black. *Hab.* Northern North America in general, breeding from northern New England, Labrador, etc., to Alaska (except coast south of the peninsula), and south in higher Rocky Mountains to Utah and Colorado; in winter, south to northern United States.

515. **P. enucleator canadensis** (Cab.). **American Pine Grosbeak.**[2]

*b*². Smaller, with proportionally much larger bill and shorter tail; length about 8.00–8.50, wing 4.25–4.60 (4.45), tail 3.60–3.80 (3.70), exposed culmen .57–.62 (.60), tarsus .88–.92 (.90). *Hab.* Kodiak to Sitka, Alaska. (Also probably southward to higher Sierra Nevada of California.)

—. **P. enucleator kodiaka** Ridgw. **Kodiak Pine Grosbeak.**[3]

Genus **PYRRHULA** Brisson. (Page 382, pl. CV., fig. 3.)

Species.

Adult male: Whole top of head, with feathers around base of bill, glossy blue-black; hind-neck, back, scapulars, and lesser and middle wing-coverts uniform ash-gray; rump plain white; upper tail-coverts, tail, and tertials glossy blue-black, inclining to dark violaceous steel-blue; greater wing-coverts black, very broadly tipped with light ash-gray, passing into white terminally; quills dull blackish;

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[1] *Loxia enucleator* Linn., S. N. ed. 10, i. 1758, 171. *Pinicola enucleator* Cab., Mus. Hein. i. 1851, 167.

[2] *Pinicola canadensis* Cab., Mus. Hein. i. Aug. 1851, 167.

[3] New subspecies. In Cabanis's *Journal für Ornithologie*, 1880, page 156, Von Homeyer describes a *Pinicola flammula* from "northwestern America," which may possibly be this form, though that it is more likely to be the ordinary Alaskan bird would appear from the statement that the tail is *longer* than the ordinary American bird, which is exactly the reverse of the Kodiak bird. It may be, however, that "longer" is an error, or slip of the pen, for "shorter."

sides of head, throat (but not chin), and rest of lower parts, except lower tail-coverts, uniform pale ash-gray, lighter on cheeks; lower tail-coverts and under wing-coverts white. *Adult female:* Similar to male, but lower parts and sides of head vinaceous-gray, or cinnamon-gray, instead of clear ash-gray. Length about 6.50, wing 3.50–3.55, tail 3.00–3.25. *Hab.* Northern Alaska (Nulato) and portions of Siberia.................................... 516. **P. cassini** (BAIRD). **Cassin's Bullfinch.**

GENUS **CARPODACUS** KAUP. (Page 383, pl. CVI., figs. 2, 3.)

Species.

COMMON CHARACTERS.—*Adult males* with the plumage partly or chiefly reddish; *adult females* olivaceous or grayish above, streaked with darker, beneath whitish, conspicuously streaked with dusky or brownish gray.

*a*¹. Tail very much shorter than wing, deeply emarginated; *adult males* with wing-feathers edged with reddish. *Nest* a rather flat, thin structure, composed of fine dry rootlets, grasses, etc., on horizontal branches of trees. *Eggs* 2–4, greenish blue or bluish green, finely speckled, chiefly on larger end, with black and dark brown. (Subgenus *Carpodacus.*)

*b*¹. Lower tail-coverts without distinct dusky streaks; depth of bill through base equal to or greater than length of gonys. *Adult males:* Above dark dull madder-pink, clearer on rump, deeper and brighter on top of head, the back more or less obscured by darker centres to feathers, and often (especially in winter) by grayish edgings; feathers of back streaked medially with dusky; lower parts, except belly and lower tail-coverts, dull madder-pink, the sides strongly tinged or washed with this color. *Adult females:* Above olivaceous, mixed with grayish, and streaked with darker; sides of head with two distinct brownish stripes, or patches, one covering ear-coverts, the other on each side of throat, the two separated by a whitish maxillary stripe; lower parts dull white, conspicuously streaked with dusky. *Young:* Similar to adult female, but colors duller, markings less distinct, and edgings of wing-feathers more buffy or tawny.

*c*¹. First quill usually longer than fourth. *Adult male* with sides and flanks usually not tinged with brown, and not distinctly streaked; if streaked, the streaks usually narrow, and sharply defined; back more distinctly streaked, red of crown brighter, and that of rump paler and clearer. *Adult female:* Top of head and back distinctly streaked; streaks of lower parts broader, darker, and more sharply defined. Length 5.50–6.25, wing (males) 3.15–3.40 (3.27), tail 2.30–2.50 (2.40). *Eggs* .80 × .57. *Hab.* Eastern North America, breeding from northern United States northward.

517. **C. purpureus** (GMEL.). **Purple Finch.**

*c*². First quill usually shorter than fourth. *Adult male* with sides and flanks

usually strongly suffused with brownish and broadly though no
sharply streaked with darker; back very indistinctly streaked, th
central portion of the feathers being less dark and the edges darke
than in *C. purpureus;* red of crown darker and that of rump muc
darker and duller than in *C. purpureus.* *Adult female* with uppe
parts more uniform, and streaks on lower parts rather narrowe
less sharply defined, and paler than in *C. purpureus.* Length 6.0
–6.50, wing (male) 3.10–3.20 (3.13), tail 2.40–2.60 (2.49). *Egg*
.77 × .56. *Hab.* Pacific coast of United States, from souther
California to British Columbia, breeding in mountains.

517*a*. **C. purpureus californicus** Bair
California Purple Finch

b^2. Lower tail-coverts with distinct streaks of dusky; depth of bill throug
base less than length of gonys. *Adult male:* Top of head bright crimson;
back and scapulars pinkish brown, the feathers edged with ligh
grayish and streaked medially with dusky; rump nearly uniform du
pinkish; throat and breast pale dull rose-pink; rest of lower part
white, the sides scarcely tinged with pinkish, and lower tail-covert
conspicuously streaked with dusky. *Adult female:* Above olive-grayis
streaked with dusky; sides of head nearly uniform grayish olive, finel
streaked with dusky; lower parts white, conspicuously streaked wit
dusky. *Young:* Similar to adult female, but streaks on lower part
narrower and less distinct, and wing-edgings more ochraceous. Lengt
6.50–6.95, wing 3.60–3.95, tail 2.60–3.00. *Eggs* .86 × .60. *Hab.* Wester
United States, north to British Columbia, east to Rocky Mountain
and south over highlands of Mexico.

518. **C. cassini** Baird. **Cassin's Purple Finc**

a^2. Tail not decidedly shorter than wing, not distinctly emarginated; *adult mal*
with wing-feathers edged with pale grayish. *Nest* a well-built, compa
structure, composed of dried grass-stems, plant-fibres, etc., built in trees o
about houses (often within deserted nests of other species). *Eggs* 3–6, bluis
white, or very pale greenish blue, sparsely speckled, chiefly round larger en
with black. (Subgenus *Burrica* Ridgw.[1])

Adult males: Above brownish gray (this sometimes overlaid or replaced b
a wash or suffusion of reddish), without distinct streaks on back; rum
forehead, superciliary stripe, malar region, chin, throat, and chest reddis
—these reddish areas sometimes running together, the red thus coverin
the greater extent of the plumage; rest of lower parts whitish, more o
less extensively streaked with dark grayish brown; wings and tail dusk
grayish brown, the feathers edged with a paler shade of the same. *Adu*
females: Above entirely grayish brown, indistinctly streaked with darke
beneath everywhere white, broadly streaked with dark grayish brow
Young: Similar to adult female, but back more distinctly streake

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[1] New subgenus. Type, *Fringilla mexicana* Müll.

streaks on lower parts narrower and less distinct, and wing-coverts tipped with dull buffy.

b^1. Bill from nostril not more than .35, its depth at base not more than .35; tarsus not more than .70.

c^1. *Adult male* with the red absolutely restricted within very definite and sharply-defined limits, its area including only the forehead and a broad superciliary stripe (reaching back to occiput), the malar region, chin, throat (sometimes chest also), and rump; its tint a very intense carmine or crimson. Otherwise, not obviously different from true *C. frontalis.* Wing (male) 3.05–3.10 (3.08), tail 2.60–2.80 (2.70). *Hab.* Eastern and southern Mexico (Vera Cruz, etc.).

C. mexicanus (Müll.). **Crimson-fronted House Finch.**[1]

c^2. *Adult male* with the red spreading at least over breast (sometimes over whole lower parts, except anal region and lower tail-coverts, and occasionally even tingeing the latter), and also invading, more or less, the crown, hind-neck, back, etc.; or else, if absolutely restricted within very definite limits, the tint not an intense carmine or crimson. Length about 5.75–6.25, wing (male) 2.85–3.30 (3.08), tail 2.40–2.80 (2.57). *Eggs* .80 × .55. *Hab.* Western United States, from Rocky Mountains to Pacific coast (chiefly south of 40° in the interior), and south through western and central Mexico to Colima and Guanajuato; Lower California.

519. **C. mexicanus frontalis** (Say). **House Finch.**[2]

b^2. Bill from nostril .40, or more, depth at base .40, or more, tarsus .75, or more.

In plumage similar to *C. frontalis* (*verus*), but darker; length about 6.00–6.50, wing 3.10–3.35 (3.27), tail 2.60–2.90 (2.83), bill from nostril .40–.45 (.43), depth of bill at base .40–.50 (.46), tarsus .75–.85 (.80). *Hab.* Guadalupe Island, Lower California.

520. **C. amplus** Ridgw. **Guadalupe House Finch.**

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[1] *Fringilla mexicana* Müll., Syst. Nat. Suppl. 1766, 165. *Carpodacus mexicanus* Ridgw., Pr. Biol. Soc. Wash. ii. 1885, 111.

[2] After a very careful comparison of more than a hundred adult males (in red or partially red plumage), I am now quite convinced that the supposed race named *Carpodacus rhodocolpus* by Cabanis (519*a*. *C. frontalis rhodocolpus*, Crimson House Finch, of the A. O. U. Check List) is entirely untenable. The easily recognizable differences of color (maximum extension of the red) which have led to its recognition prove to be, in the light of this abundant new material, not correlative with locality, as supposed, but are evidently an individual peculiarity, perhaps dependent upon age. I am not at all certain, however, that the Lower-Californian bird should not be separated. A considerable percentage of the specimens which I have been able to examine are so peculiar that nothing approaching them can be found in the very large series from other localities. These peculiarities consist, (1) in the smaller general size, (2) rather more swollen bill, and (3) greater extension of the red. This last peculiarity is carried to such an extreme that in all of the "Cape St. Lucas" specimens the under tail-coverts are deeply tinged with pink, while in some even the wing-bands are pinkish; in several the pure deep madder-pink of the breast is continued backward over the belly and flanks, where the usual dusky streaks are entirely obliterated. From the insufficient material at my command I am unable to form a decided opinion in the matter, but the indications appear very strong that a local race, peculiar to the southern portion of Lower California, will eventually have to be recognized, in anticipation of which I propose the name *Carpodacus mexicanus ruberrimus.*

GENUS **LOXIA** LINNÆUS. (Page 382, pl. CVI., fig. 1.)

Species.

COMMON CHARACTERS.—*Adult males* chiefly reddish, with dusky wings and tail, the former sometimes marked with white; *females* plain olive, tinged with grayish or yellowish, sometimes more or less streaked with darker; *young* light olive-grayish, everywhere streaked with dusky.

a^1. Wings without white markings. *Adult males* dull red (usually brighter on rump), the wings and tail uniform dusky. *Adult females* olivaceous instead of red, the olive varying in shade from a grayish to a yellowish cast, often strongly tinged, in places, with the latter color. *Young:* Pale dingy grayish or light olive, paler beneath, everywhere (except on wings and tail) streaked with dusky.

b^1. Smaller: Length 5.50–6.25, wing 3.20–3.60 (average about 3.40), tail 1.85–2.40 (average about 2.15), culmen .50–.68 (average about .62), depth of bill .30–.40 (average about .35), tarsus .58–.68 (average about .63). *Nest* a rather flat structure, in coniferous trees, composed externally of spruce twigs, shreds of soft bark, etc., lined with horse-hair, fine rootlets, etc.; cavity about 2.50 across by 1.25 deep, external diameter about 4.00. *Eggs* usually 4, .75 × .57, pale greenish, spotted with various shades of brown, mixed with purplish gray. *Hab.* North America in general, but chiefly far northward, and east of Great Plains; breeding, sporadically, south to Maryland and Virginia near coast, and to northern Georgia, Tennessee, and Kentucky in mountains.

521. **L. curvirostra minor** (BREHM). **American Crossbill.**

b^2. Larger: Length about 6.80–7.25, wing 3.85–4.10 (average nearly 4.00), tail 2.50–2.60 (2.54), culmen .72–.82 (.78), depth of bill .45–.50 (.49), tarsus .65–.72 (.70), lower mandible averaging heavier, compared with the upper, and colors brighter, than in *L. minor*. *Hab.* Southwestern United States, from western Kansas, Colorado, and Arizona, south through highlands of Mexico.

521*a*. **L. curvirostra stricklandi** (RIDGW.). **Mexican Crossbill.**[1]

a^2. Wing with two broad white bands (on tips of middle and greater coverts), the two confluent at upper portion. *Adult male:* General color purplish red or dull rosy, occasionally tinged with yellow or orange; scapulars, wings, and tail deep black, the former varied with white, as described above; back clouded with blackish. *Adult female:* Olive-greenish or grayish above, paler, often more yellowish, beneath; wings and tail as in male, but duller black. *Young:* Pale olivaceous, more dingy whitish, tinged with yellowish, beneath, everywhere streaked with dusky; wings and tail much as in adults. Length 6.00–6.50, wing 3.50, tail 2.60. *Hab.* Northern North America, breeding from northern New England and higher northern Rocky Mountains northward; south, in winter, to or beyond lat. 40°.

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[1] A large majority of the specimens from western North America, north of Colorado and Arizona, and a "sprinkling" of those from eastern North America (especially in New England and the British Provinces), are intermediate between *L. minor* and *L. stricklandi*, as defined above. This connecting series, which in the northwestern portion of the United States is sufficiently uniform in its characters to be worthy of recognition as a geographical race, has already been named by me *L. curvirostra bendirei*. (See Proc. Biol. Soc. Washington, ii. 1884, 101; author's extras published April 28, 1884.)

522. **L. leucoptera** GMEL. **White-winged Crossbill.**

GENUS **LEUCOSTICTE** SWAINSON. (Page 383, pl. CVI., figs. 4, 5.)

Species.

COMMON CHARACTERS.—*Adult:* Plumage uniform brownish, above and below, (sometimes slightly broken by whitish or reddish tips to the feathers); tail-coverts dusky, broadly tipped with rose-pink, or else pale hoary gray or silvery white, with darker shaft-streaks. *In summer,* bill entirely deep black, feathers of anterior lower parts without paler tips or margins, and red tints brighter. *In winter,* bill yellow, tipped with blackish, feathers of anterior lower parts tipped or margined terminally with whitish, the red tints of a pinkish hue. *Young:* Plain brownish, without black or gray on head or rosy tips to tail-coverts, etc. *Nest* built among rocks, bulky, composed of grasses, etc., lined with soft feathers. *Eggs* pure white, without markings.

a^1. Sides of lower mandible with a distinct oblique ridge near base; tail-feathers, primaries, secondaries, greater wing-coverts, and primary coverts dusky, edged with paler; tail-coverts dusky, broadly tipped with rose-pink in adults. (Subgenus *Leucosticte.*)

b^1. Nasal tufts white.

c^1. Head of adult partly ash-gray.

d^1. Tarsus .85, or more, culmen .50, or more; wing usually more than 4.30, tail usually more than 3.30.

Adult: Forehead and fore-part of crown black; throat dusky; rest of head uniform ash-gray; general color of plumage dark chocolate-brown, with a chestnut cast on breast, the feathers of posterior portions tipped with rose-pink. *Young:* Uniform grayish brown, more or less washed with a more umber tint; wings and tail dusky slate, the feathers bordered with paler; edges of greater wing-coverts and tertials dull buffy; no trace of pink on tail-coverts, etc., or of gray or black on head. Length about 7.50–8.50, wing 4.20–4.85 (4.49), tail 3.15–3.90 (3.49), culmen .50–.62 (.57), tarsus .85–1.00 (.95). *Eggs* .95 × .67. *Hab.* Aleutian and Prybilof Islands, Alaska; west to Commander Islands, Kamtschatka, east to Kadiak.

523. **L. griseonucha** (BRANDT). **Aleutian Leucosticte.**

d^2. Tarsus not more than .85 (usually much less), culmen not more than .50 (usually less), wing usually much less than 4.30, tail usually less than 3.00.

e^1. General color deep cinnamon-brown.

f^1. Gray of hind-head strictly limited to that portion above the ear-coverts; length 5.75–6.85, wing 3.80–4.40 (4.11), tail 2.75–3.30 (3.00), culmen .40–.50 (.46), tarsus .75–.86 (.79). *Hab.* Breeding on higher mountains from Rocky Mountains of British America to Mt. Whitney, California; migrating in winter through Rocky Mountain district of United States to Colorado; east, occasionally, to western Iowa..... 524. **L. tephrocotis** Swains.

Gray-crowned Leucosticte.

f^2. Gray of hind-head spread more or less extensively below upper margin of ear-coverts, sometimes involving entire head, except the black frontal patch; length about 6.30–7.00, wing 3.80–4.30 (4.03), tail 2.70–3.30 (2.95), culmen .40–.50 (.46), tarsus .75–.85 (.77). *Hab.* Pacific coast ranges of northwestern North America; in winter, coast, from Kadiak southward, and southeastward through mountains of the Great Basin to western Nevada and eastern Montana and Colorado.

524*a*. **L. tephrocotis littoralis** (Baird).

Hepburn's Leucosticte.

e^1. General color sooty blackish (male) or sooty slate (female).

Adult male: Pattern of head exactly as in *L. tephrocotis;* the cinnamon-brown of that species replaced in the male by sooty black (more brownish on back) and sooty grayish in female; length about 6.50–7.00, wing 3.80–4.25 (4.05), tail 2.80–3.15 (2.98), culmen .40–.45 (.43), tarsus .75–.80 (.78). *Hab.* In winter, central Rocky Mountains, in Colorado and Wyoming, west to Uintah Mountains, Utah.

525. **L. atrata** Ridgw. **Black Leucosticte.**

c^2. Head of adult (and young) without any ash-gray.

Adult male: General color light tawny brown (much less rufescent than in *L. tephrocotis* and *L. littoralis*), deeper on throat, where sometimes tinged with purplish; top of head blackish anteriorly, grayish brown or brownish gray posteriorly (not markedly different from the general color of head and body), the edges of the feathers more grayish, sometimes producing a somewhat scaled appearance. *Adult female:* Similar, but very much paler and duller, the pinkish tints much less distinct, sometimes almost obsolete. *Young:* Plain light brownish, the wing-coverts more buffy; no pinkish on tail-coverts, etc., nor black on forehead. Length about 6.50–7.25, wing 4.00–4.40 (4.15), tail 2.80–3.35 (3.09), culmen .40–.48 (.45), tarsus .70–.80 (.77). *Hab.* High mountains of Colorado in summer (10,000 feet and upwards); lower districts, and south to northern Mexico, in winter.

526. **L. australis** (Allen). **Brown-capped Leucosticte.**

*b*². Nasal tufts black.

Adult: Head blackish; hind-neck light rusty; general color of body dark chocolate-brown; otherwise, much like *L. tephrocotis,* and allies, the size about the same. *Hab.* Northeastern Asia, from Kamtschatka to northern Japan.

L. brunneinucha (Brandt). **Japanese Leucosticte.**[1]

*a*². Sides of lower mandible without oblique ridge; tail-feathers, primaries, secondaries, primary coverts, and greater coverts light hoary gray or silvery white, with darker shaft-streaks; tail-coverts without rosy tips. (Subgenus *Hypolia* Ridgway.[2])

Adult: General color plain sepia-brown, paler, and sometimes more tawny, on hind-neck, the tail, etc., silvery whitish, as described above; length about 6.00–6.50, wing 4.60, tail 3.15. *Hab.* Northeastern Asia (Siberia, etc.); accidental on Aleutian Islands (?)

L. arctoa (Brandt). **Silvery-winged Leucosticte.**[3]

Genus **ACANTHIS** Bechstein. (Page 382, pl. CVII., fig. 1.)

Species.

Common Characters.—*Adult males:* Above streaked with dusky upon a brownish, grayish, or whitish ground, the rump sometimes immaculate white or pinkish; top of head bright red (except in *A. brewsterii*); wings and tail dusky, the feathers edged with paler, the middle and greater wing-coverts tipped with whitish or pale brownish; superciliary region and lower parts chiefly whitish, but anterior lower parts (except in *A. brewsterii*) more or less tinged with red, and sides usually more or less streaked with dusky; a more or less distinct dusky spot on chin and upper part of throat (except in *A. brewsterii*). *Adult females:* Similar to the males, but without any red on breast, etc., the crown, however, red as in male. *Young:* No red whatever on crown or elsewhere; whole head streaked with dusky and grayish or brownish white, the latter color prevailing on under portions; otherwise much as in adult female, but plumage of much softer, more "woolly" texture and markings less sharply defined. (*Note.*—Both sexes have in summer a blackish bill, the red of a brighter tint and the colors darker than in winter, during which season the bill is yellow tipped with black, the lighter markings more pronounced, and the plumage in general more or less strongly suffused with buffy or light ochraceous-brown.) *Nest* a rather bulky structure composed of small twigs, straws, etc., mixed with feathers, warmly lined with soft feathers, etc., placed in bushes or small trees. *Eggs* 2–5, pale bluish green, speckled, chiefly round larger end, with reddish brown, sometimes mixed with a few black specks or lines.

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[1] *Fringilla (Linaria) brunneinucha* Brandt, Bull. Ac. St. Petersb. Nov. 1841, 35. *Leucosticte brunneinucha* Caban., Mus. Hein. i. 1851, 154.

[2] *Hypolia* Ridgw., Bull. U. S. Geol. & Geog. Surv. Terr. No. 2, sec. ser. May 11, 1875, 67. Type, *Passer arctous* Pall.

[3] *Passer arctous,* var. *α*, Pall., Zoog. Rosso-As. ii. 1826, 21. *Leucosticte arctoa* Bonap., Consp. i. 1850, 537.

*a*¹. Adults with top of head (crown) bright red (usually crimson), and a dusky spot covering chin and upper part of throat; plumage without sulphur-yellow tinge in any part.

*b*¹. Wing exceeding tail by less than length of tarsus; rump plain white or pinkish; sides very narrowly or sparsely, or not at all, streaked; under tail-coverts with darker shaft-streaks narrow and indistinct, or sometimes altogether wanting; inner webs of tail-feathers very broadly edged with white; plumage in general very light, with whitish or light grayish prevailing on upper parts, the lower parts almost entirely white; *adult males* with chest and sides of breast merely tinged with delicate peach-blossom pink.

*c*¹. Larger (length about 5.50–6.50), with proportionally thicker and less acute bill. *Male:* Wing 3.35–3.45 (3.37), tail 2.70–2.85 (2.75), exposed culmen .32–.37 (.35), depth of bill at base .30–.32 (.31), tarsus .62–.70 (.66), middle toe .32–.37 (.35). *Female:* Wing 3.25–3.35 (3.31), tail 2.65–2.80 (2.74), exposed culmen .35–.38 (.36), depth of bill at base .30–.32 (.31), tarsus .62–.68 (.64), middle toe .32–.37 (.35). *Hab.* Northern Greenland (breeding from 69°–73° N. latitude) and eastern Arctic America, south to Labrador in winter.

527. **A. hornemannii** (Holb.). **Greenland Redpoll.**

*c*². Smaller (length about 4.50–5.25), with proportionally smaller and more acute bill. *Male:* Wing 2.95–3.10 (3.02), tail 2.50–2.55 (2.52), exposed culmen .30, depth of bill at base .22–.25 (.23), tarsus .52–.58 (.55), middle toe .30–.32 (.30). *Female:* Wing 2.80–3.05 (2.87), tail 2.30–2.60 (2.46), exposed culmen .28–.32 (.29), depth of bill at base .20–.25 (.22), tarsus .50–.57 (.54), middle toe .28–.30 (.29). *Eggs* .68 × .51. *Hab.* Circumpolar continental regions; in North America, south, in winter, rarely, to northern border of United States.

527*a*. **A. hornemannii exilipes** (Coues). **Hoary Redpoll.**

*b*². Wing exceeding tail by more than length of tarsus; rump distinctly streaked; sides distinctly, often broadly and heavily, streaked with dusky; under tail-coverts with very distinct dusky mesial streaks; inner webs of tail-feathers very slightly, if at all, edged with white; plumage in general darker, with darker markings prevailing on upper parts, the lower parts never entirely white; *adult males* with chest and sides of breast deep madder-pink.

*c*¹. Smaller (length 4.50–5.25), with proportionally longer and more acute bill. (Wing averaging less than 3.00 in males, less than 2.95 in females.)

*d*¹. Smaller (length about 4.50–5.00), with proportionally smaller bill. *Male:* Wing 2.80–3.05 (2.91), tail 2.20–2.50 (2.33), exposed culmen .32–.38 (.35), depth of bill at base .22–.27 (.24), tarsus .55–.60 (.57), middle toe .33–.35 (.34). *Female:* Wing 2.75–2.90 (2.84), tail 2.20–2.40 (2.31), exposed culmen .30–.37 (.34), depth of bill at base .20–.25 (.22), tarsus .55–.60 (.58), middle toe .30–.32 (.31). *Eggs* .69 × .48. *Hab.* Northern portions of northern hemisphere, except Greenland and certain sea-coast districts; in North America migrating south, in winter, to about 40°.

528. **A. linaria** (Linn.). **Redpoll.**

*d*². Larger (length about 5.00–5.25), with proportionally larger bill. *Male:* Wing 2.85–3.05 (2.96), tail 2.25–2.45 (2.34), exposed culmen .35–.43 (.39), depth of bill at base .25–.30 (.28), tarsus .58–.62 (.60). *Female:* Wing 2.80–3.00 (2.89), tail 2.25–2.50 (2.33), exposed culmen .35–.43 (.40), depth of bill at base .27–.30 (.28), tarsus .55–.60 (.58). *Hab.* Northern coasts of Europe and Asia (Norway to Japan), and portions of coast of Alaska; also occurring in winter in vicinity of Quebec.[1]

528*a*. **A. linaria holbœllii** Brehm. **Holbœll's Redpoll.**

*c*². Larger (length about 5.25–5.75), with proportionally shorter, thicker, and less acute bill. (Wing averaging more than 3.15 in males, more than 3.05 in females; colors also usually darker than in *A. linaria* and *A. holbœllii*, the lateral lower parts usually much more broadly or heavily striped.) *Male:* Wing 3.05–3.30 (3.18), tail 2.35–2.70 (2.53), exposed culmen .32–.42 (.37), depth of bill at base .25–.30 (.28), tarsus .60–.70 (.65), middle toe .30–.40 (.36). *Female:* Wing 2.95–3.25 (3.08), tail 2.40–2.60 (2.51), exposed culmen .33–.42 (.37), depth of bill at base .25–.30 (.28), tarsus .60–.68 (.63), middle toe .35–.38 (.37). *Hab.* Southern Greenland in summer, migrating south, in winter, through Labrador to (sparingly) the northern border of the United States (New England, lower Hudson Valley, northern Illinois, etc.), and west to Manitoba.

528*b*. **A. linaria rostrata** (Coues). **Greater Redpoll.**

*a*². Adults without red on top of head, or dusky spot on chin, and with portions of the plumage tinged with sulphur-yellow.

Adult female (male unknown): Above olive-brownish, streaked with dusky, the rump tinged with pale sulphur-yellow; beneath whitish, faintly tinged with dull buffy or pale fulvous on chest, the sides and lower tail-coverts streaked with dusky; wings with two pale fulvous bands across coverts; quills and tail-feathers narrowly edged with pale sulphur-yellow; wing 3.00, tail 2.50, tarsus .50, middle toe .30. *Hab.* Waltham, Massachusetts (one specimen, obtained November 1, 1870).

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[1] The only American specimens of this form that I have seen are five from Kadiak (breeding birds) and the same number from Quebec (winter specimens). It cannot, of course, be stated where the latter came from, their migration from the northwestward or from the eastward (possibly Newfoundland) through the St. Lawrence Valley being equally possible.

—. **A. brewsterii** RIDGW. **Brewster's Linnet.**[1]

GENUS **SPINUS** KOCH. (Page 383, pl. CVII., figs. 3, 4.)

Species.

*a*1. Inner webs of tail-feathers, except two middle pairs, with a white spot or patch.

*b*1. No yellow on wings (except sometimes on lesser coverts).

*c*1. Back yellow or brownish; inner web of tail-feathers dusky, becoming white or whitish terminally. *Adult male in summer:* Pure lemon-yellow, the forehead, crown, lores, wings, and tail black; tail-coverts, middle (sometimes lesser) wing-coverts, tips of greater wing-coverts, and part of margins of quills and secondaries white. *Adult female in summer:* Above olive-brownish or grayish, sometimes tinged with olive-greenish, the wings and tail blackish dusky, marked as in the male; upper tail-coverts pale grayish or grayish white; lower parts dull grayish white, more or less tinged with yellow, especially anteriorly and laterally (sometimes entirely soiled yellow, except under tail-coverts). *Adult male in winter:* Similar to adult female, but wings and tail deeper black, with whitish markings broader and more distinct. *Adult female in winter:* Similar to summer plumage, but more tinged with brownish, the lighter wing- and tail-markings broader and tinged more or less with buffy brownish. *Young:* somewhat like winter adults, but much browner, the wing-markings mostly light cinnamon, and the plumage generally suffused with this color. Length about 4.45–5.40, wing 2.60–2.90, tail 1.80–2.10. *Nest* a very neat, cup-shaped structure composed of compactly woven plant-fibres, etc., lined with plant-down and other soft materials, placed in tall bushes or low trees. *Eggs* 3–5, .66 × .47, plain pale bluish or bluish white. *Hab.* Whole of temperate North America; resident.

(58.) 529. **S. tristis** (LINN.). **American Goldfinch.**

*c*2. Back olive-green or glossy black, or with a mixture of these colors; inner webs of tail-feathers white, tipped with black (entirely black in *S. psaltria columbianus*;[2] length about 4.00–4.50, wing 2.40–2.55, tail 1.70–1.90. (*Adult male:* Upper half of head, wings, and tail deep black; rest of upper parts varying from uniform olive-green to uniform glossy black; base of quills with a more or less distinct white patch; lower parts entirely lemon-yellow. *Adult female:* Above plain grayish olive-green, beneath light greenish yellow; no black on head; wings and tail as in the male, but less deeply black, the white more restricted. *Young:* Similar to adult female, but tinged more or less with buffy, the wing-coverts tipped with buff.)

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[1] No. 17, "Hypothetical List" of A. O. U. Check List (p. 354).

[2] *Chrysomitris columbiana* LAFR., Rev. Zool. 1843, 292. *Hab.* Costa Rica to Colombia and Venezuela.

*d*¹. *Adult male* with back and ear-coverts plain olive-green. *Nest* and *eggs* like those of *S. tristis*, the latter smaller, averaging .59 × .44. *Hab.* Western United States, north to northern California, Oregon, Utah, and Colorado, south (in winter at least) to Lower California, Sonora, Arizona, New Mexico, and western Texas.
530. **S. psaltria** (Say). **Arkansas Goldfinch.**

*d*². *Adult males* with back and ear-coverts either "solid" black or more or less mixed with black.

*e*¹. *Adult males* with back or ear-coverts, or both, more or less mixed with olive-green. *Hab.* Southwestern United States and contiguous portions of Mexico, north to Arizona and Colorado (accidentally? to Alameda County, California), east to Texas and Nuevo Leon, Mexico.
530*a*. **S. psaltria arizonæ** (Coues). **Arizona Goldfinch.**

*e*². *Adult males* with back and ear-coverts "solid" glossy black, and yellow of lower parts brighter than in other races. *Hab.* Mexico (except northwestern portions) and south to Costa Rica; north to southern Texas..... 530*b*. **S. psaltria mexicanus** (Swains.). **Mexican Goldfinch.**

*b*². Outer surface of wing-coverts, secondaries, and primaries chiefly yellow. (Inner webs of tail-feathers with a subterminal white patch.)

Adult male: Anterior part of head, all round, including throat and fore-part of crown, black; above brownish gray (the back sometimes tinged with olive-green), changing to bright yellowish olive-green on rump; sides of head and lateral under parts lighter brownish gray, becoming white on lower tail-coverts and middle of belly; chest and breast yellow. *Adult female:* Similar to male, but without black of head, and colors generally duller, the yellow less distinct. (In winter, both sexes colored as in summer, but plumage softer, with colors more subdued.) *Young:* Similar to adult female, but duller, with yellow, especially on breast, much less distinct, and lower parts indistinctly streaked. Length 4.50–4.70, wing 2.50–2.85, tail 2.00–2.25. *Eggs* 3–5, .58 × .44, pure white or buffy white. *Hab.* California; southeastward, in winter, to Arizona (Fort Whipple)......... 531. **S. lawrencei** (Cass.). **Lawrence's Goldfinch.**

*a*². Inner webs of tail-feathers without white spot, but with basal portion yellow; secondaries or primaries, or both, also yellow at base.

*b*¹. Plumage not streaked, the head partly, or entirely, black in adults.

*c*¹. *Adult* (sexes alike?): Head, all round, fore-neck (down to chest), wings, and tail black; basal portion of primaries, secondaries, and tail-feathers gamboge-yellow; upper parts greenish olive-yellow, the back sometimes spotted or clouded with dusky; lower parts rich gamboge-yellow. *Young:* Head olive above and yellow beneath, like body; colors all duller, but pattern of wings and tail same as in adult. Length about 4.50–4.75, wing 2.40–2.70, tail 1.70–2.00, exposed culmen .42–.48.

*d*¹. More yellowish olive above and brighter yellow beneath; black of throat extending back to, and including, upper part of chest. *Hab.* Highlands of Guatemala and southern Mexico, north to mountains of Vera Cruz and Chihuahua; accidental in Kentucky.

532. **S. notatus** (Du Bus). **Black-headed Goldfinch.**

*d*². More olive-green above, more olivaceous-yellow beneath; black of throat not extending to chest. *Hab.* Mountains of Durango.

S. forreri (Salv. & Godm.). **Forrer's Goldfinch.**[1]

*c*². *Adult:* Top of head black; back, etc., dark olive-green; lower parts lighter olive-green (sometimes more grayish); wings and tail black, with terminal half of greater wing-coverts and terminal edges and tips of tertials bright olive-green; a spot of bright yellow at base of primaries; wing 2.80, tail 1.80–1.90. *Hab.* Guatemala.

S. atriceps (Salv.). **Salvin's Goldfinch.**[2]

*b*². Plumage conspicuously streaked, above and below, the head without any black.

Adult: Above grayish or brownish, below whitish, everywhere streaked with dusky; basal portion of secondaries and tail-feathers sulphur-yellow. *Young:* Similar to adult, but with more or less of a fulvous suffusion, especially on tips of wing-coverts. Length 4.50–5.25, wing 2.75–2.90, tail 1.85–1.95. *Nest* usually a rather flat though compact structure of fine twigs, rootlets, hair, plant-fibres, etc., lined with fine rootlets and hair. *Eggs* usually 3 or 4, about .62 × .50, pale greenish blue, speckled, chiefly on or round larger end, with reddish brown, usually mixed with a few small black markings. *Hab.* Northern North America, breeding from northern United States northward, and south in Rocky Mountains; south, in winter, to Gulf States and Mexico.

533. **S. pinus** (Wils.). **Pine Siskin.**

Genus **CARDUELIS** Brisson.[3] (Page 383, pl. CV., fig. 4.)

Species.

Adult (*sexes alike*): Fore-part of head, all round, crimson; lores, hinder part of crown, occiput, and bar from latter half-way across side of neck, black; rest of head white, more or less tinged with buff; back and scapulars plain brown; rump and upper tail-coverts white; wings and tail chiefly black; greater portion of greater coverts, basal portion of lower secondaries, and basal half or more of exposed portion of outer webs of primaries, pure gamboge-yellow; secondaries, primaries, and middle tail-feathers tipped with white, the inner webs of outer tail-feathers partly white; sides of breast, sides, and flanks plain cinnamon-brown; rest of lower parts dull white. *Young:* "Head, neck, back, and scapulars dull light wood-brown; wings as in the adult female, but the primaries are slightly and the secondaries broadly tipped with brownish buff; tail less marked with white, and tipped with buffy brown; chin, throat, and under parts dirty white, the throat and the breast washed with pale brown, the latter very indistinctly spotted with sooty brown." (Dresser.) Length 4.75–5.50, wing 2.90–3.15, tail 2.00–2.10, exposed culmen .45–.55. *Nest* a very neat, compact, cup-shaped structure, composed of fine grasses, mosses, etc., mixed and lined with plant-down, situated in bushes or small deciduous trees (often fruit trees). *Eggs* 4–6, .70 × .49, bluish or greenish white, or light greenish blue, marked with reddish brown round larger end. *Hab.* Europe and western Asia; introduced into and naturalized in portions of eastern United States (breeding in Central Park, New York City, vicinity of Cambridge, Mass., etc.).

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[1] *Chrysomitris forreri* Salv. & Godm., Biol. Centr.-Am., Aves, i. Nov. 1886, 429.

[2] *Chrysomitris atriceps* Salv., P. Z. S. 1863, 190.

[3] *Carduelis* Brisson, Orn. iii. 1760, 53. Type, *Fringilla carduelis* Linn.

C. carduelis (Linn.). **Goldfinch.**[1]

Genus **PASSER** Brisson.[2] (Page 382, pl. CVII., fig. 2.)

Species.

Common Characters.—Above brownish, the back streaked with black; wing with two white bands; lower parts dull grayish white or pale grayish; *adult males* with chin, throat, and lores black, and lesser wing-coverts chestnut.

a^1. Larger (wing 2.85–3.00); *adult male* with black of throat continued over chest, where forming a broad patch; ear-coverts entirely dull grayish; top of head grayish, with a large patch of bright chestnut on each side, from eye back to sides of nape; length about 5.50–6.25, wing about 2.85–3.00, tail 2.35–2.50. *Nest* a bulky structure of dried grasses, etc., lined with feathers, placed in various odd nooks about houses, holes in trees, on branches of trees, etc. *Eggs* 4–7, .86 × .62, dull whitish, thickly speckled and dashed with dark brown and purplish gray. *Hab.* Europe, etc.; unfortunately introduced into the United States, where it now occurs universally throughout inhabited districts.

P. domesticus (Linn.). **European House Sparrow.**[3]

a^2. Smaller (wing less than 2.85); *adult male* with black of throat not continued over chest; ear-coverts with a large black spot; top of head entirely liverbrown, or purplish chestnut; length about 5.00–6.00, wing 2.80, or less, tail 2.40, or less. *Nest* in holes of trees, about isolated buildings, etc., essentially similar to that of *P. domesticus*. *Eggs* 4–6, .78 × .55, similar to those of *P. domesticus*, but averaging "smaller and usually darker and redder." (Seebohm.) *Hab.* Europe, etc.; introduced into the United States, where it is thoroughly naturalized in the vicinity of St. Louis, Mo.

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[1] *Fringilla carduelis* Linn., S. N. ed. 10, i. 1758, 180. *Carduelis carduelis* Schæff., Orn. Mus. 1789, 23.

[2] *Passer* Briss., Orn. iii. 1760, 71. Type, *Fringilla domestica* Linn.

[3] *Fringilla domestica* Linn., S. N. ed. 10, i. 1758, 183. *Passer domesticus* Schæff., Orn. Mus. 1789, 24.

P. montanus (Linn.). **European Tree-Sparrow.**[1]

Genus PLECTROPHENAX Stejneger. (Page 382, pl. CVII., fig. 5.)

Species.

Common Characters.—Prevailing color white, the inner webs of tail-feathers (except sometimes of two middle pairs) entirely so. *Adult males in summer* with head, neck, entire lower parts, lower back, rump, secondaries (except, sometimes, tertials), and greater part of wing-coverts, entirely pure white; back and scapulars black or white; bill entirely deep black. (*In winter*, the upper parts, sides of head, and chest washed with rusty; bill yellow, the extreme tip dusky.) *Adult females* smaller than males, the upper parts entirely streaked, the wings with much less white, etc. *Young:* Top of head, hind-neck, and back and rump dull grayish, indistinctly streaked with darker; lower parts dull whitish, more or less tinged anteriorly with grayish (sometimes uniformly grayish on throat, chest, etc.). *Nest* on ground, composed of dried grasses, etc., lined with finer grasses and feathers. *Eggs* whitish (varying from a dull purplish to a greenish tint), speckled, chiefly on larger end, with various shades of brown, usually mixed with a few small black markings.

a^1. *Male* with four to six, *female* with six middle tail-feathers entirely or chiefly black or dusky; upper tail-coverts black or dusky for whole of concealed portion. *Adult males* with back, scapulars, alula, and much the greater part of longer quills (both webs) black. *Adult females* with top of head, back, scapulars, and lower back broadly streaked with black (this largely prevailing), longer quills blackish or dusky quite to tips of primary coverts, lesser and greater coverts dusky, tipped and margined with white, primary coverts dusky, edged with white. *Young* with wing mostly dusky, only the middle coverts, tips of greater coverts and middle secondaries being white.

b^1. Smaller, with much smaller bill. *Male:* Length about 6.50–7.00, wing 4.20–4.50 (4.38), tail 2.80–3.15 (2.90), culmen .40–.42 (.41), gonys .22–.26 (.23). *Female:* Length about 6.00–6.50, wing 4.00–4.10 (4.06), tail 2.70–2.75 (2.74), culmen .39–.40 (.40), gonys .21–.23 (.22). *Eggs* .91 × .64. *Hab.* Circumpolar regions, except islands in Bering's Sea; south, in winter, to northern United States.

534. **P. nivalis** (Linn.). **Snowflake.**

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[1] *Fringilla montana* Linn., S. N. ed. 10, i. 1758, 183. *Passer montanus* Koch, Baier. Zool. i. 1816, 219.

[A much less harmful species than *P. domesticus*, living mostly in suburbs and rural districts, where not increasing abnormally, and but little destructive to grain and fruit-buds.]

b^2. Larger, with much larger and longer bill. *Male:* Wing 4.25–4.70 (4.45), tail 2.85–3.20 (2.99), culmen .47–.52 (.50), gonys .26–.29 (.28). *Female:* Wing 4.10–4.25 (4.20), tail 2.75–2.80 (2.77), culmen .48–.50 (.49), gonys .24–.27 (.26). *Eggs* .93 × .69. *Hab.* Prybilof Islands, Alaska, and Commander Islands, Kamtschatka.

534*a*. **P. nivalis townsendi** Ridgw. **Prybilof Snowflake.**[1]

a^2. *Male* with black on only two middle tail-feathers, and on these restricted to a subterminal spot (sometimes almost obsolete); *female* with only four middle tail-feathers chiefly blackish. *Adult male in summer:* Pure white, including entire back; a blackish spot on inner web of first tertial (sometimes second also); terminal portion (less than exposed half) of longer quills black, this reduced on fifth quill (and, if present, on sixth also) to a small spot near tip of inner web, the outer webs of all edged and margined terminally with white; two middle tail-feathers marked near end of inner webs with a small black spot; bill entirely black. *In winter*, similar, but top and sides of head washed with deep rusty, the hind-neck, back, rump, and band across chest more faintly tinged with same; bill yellow, tipped with dusky. *Adult female in summer:* Pure white, the back and scapulars narrowly streaked with blackish (streaks broader and more wedge-shaped on scapulars), tertials with most of concealed portion blackish, the outer webs partly buffy brown, outer webs of second to fourth, fifth, or sixth quill dusky quite to the base, but broadly edged with white, all of them broadly margined at tips with the same; alulæ dusky bordered with white, and primary coverts sometimes dusky medially, but often entirely white; four middle tail-feathers blackish or dusky, broadly margined (both webs) with white, this involving nearly whole of outer web of next to middle pair; bill dusky. *In winter* similar, but upper parts, especially top of head and ear-coverts, washed with rusty, and bill yellow, tipped with dusky. *Young:* Top of head, hind-neck, back, scapulars, rump, and lower tail-coverts brownish gray (rather paler than in *P. nivalis*), the scapulars and interscapulars dusky centrally, forming broad but indistinct streaks; tertials with tips of both webs and broad edging to outer web umber-brown, the rest black; wings otherwise chiefly white, but marked with dusky, as in adults; lower parts dull white, purer posteriorly, tinged with pale smoky gray anteriorly; bill lemon-yellow. *Male:* Length about 7.00–7.50, wing 4.60–4.65 (4.62), tail 3.10–3.15 (3.12), culmen .44, gonys .24–.25. *Female:* Length about 6.50–7.00, wing 4.20–4.30 (4.25), tail 2.70–2.90 (2.83), culmen .42–.43, gonys .23. *Hab.* Breeding on Hall Island (probably also St. Matthew's Island), Bering's Sea, and in winter visiting western coast of Alaska (St. Michael's to Nushagak).

535. **P. hyperboreus** Ridgw. **McKay's Snowflake.**

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[1] New subspecies. Type, No. 106,695, Otter Island, Bering's Sea, June 8, 1885; C. H. Townsend.

GENUS **CALCARIUS** BECHSTEIN. (Page 383, pl. CVII., fig. 6.)

Species.

COMMON CHARACTERS.—*Adult males:* Top of head black; hind-neck deep rufous or buff; rest of upper parts light brownish, broadly streaked with dusky or black; outer tail-feathers with more or less of white. *Adult females:* Above similar to males, but without black on head, and usually without distinct rufous or buff on hind-neck; lower parts mainly dull whitish or buffy. *Nest* on ground, composed of dried grasses, etc., lined with feathers, etc. *Eggs* 3–6, dull whitish, spotted or speckled with brown (varying to nearly uniform brownish).

a^1. Wing more than 3.50; all the tail-feathers with inner webs dusky at base (in *C. pictus* confined, on exterior feather, to inner edge).

b^1. Inner web of outer tail-feather chiefly dusky; under wing-coverts and axillars grayish white, distinctly grayish beneath surface; breast and belly white. *Adult male in summer:* Head and chest deep black, relieved by a broad white or buffy stripe behind eye, continued downward (vertically) behind ear-coverts and then backward along sides of chest; sides broadly streaked or striped with black; rest of under parts white; hind-neck deep chestnut-rufous; lesser wing-coverts grayish, feathers black in centre. *Adult male in winter:* Black of head confined to crown, posterior and lower border of ear-coverts, lower part of throat, and patch on chest, and more or less obscured by whitish or pale brownish tips to feathers; sides of head (including lores and greater part of ear-coverts) mostly dull light brownish; rufous on hind-neck also similarly obscured. *Adult female in summer:* Much like winter male, but markings more sharply defined, black areas of chest, etc., more restricted and still more broken, hind-neck streaked with blackish, and size smaller. *Adult female in winter:* Similar to summer plumage, but browner and less sharply streaked above, hind-neck often without trace of rufous, lower parts dull brownish white, and dusky markings of chest, etc., very indistinct. *Young:* Above tawny buffy, everywhere (except on wings and tail) broadly streaked with black; beneath pale buffy, the lower throat, chest, and sides of breast broadly streaked with blackish. *Male:* Length about 6.10–6.90, wing 3.60–3.90. *Female:* Length about 5.50–6.00, wing 3.50–3.60. *Eggs* .83 × .60, varying from dull whitish spotted with brown to nearly uniform umber-brown. *Hab.* Circumpolar regions; in North America migrating southward to northern United States, sometimes as far as South Carolina (rarely), Kentucky, Kansas, Nevada, etc.

536. **C. lapponicus** (LINN.). **Lapland Longspur.**

b^2. Inner web of outer tail-feather chiefly white; under wing-coverts and axillars wholly pure white; entire lower parts buffy. *Adult male in summer:* Top and sides of head deep black, relieved by a broad white stripe behind eye, a narrow white stripe along middle portion of ear-coverts, and a white malar stripe, much widest posteriorly; hind-neck and entire lower parts deep ochraceous-buff, the first streaked with dusky; anterior lesser wing-coverts deep black, posterior ones pure white, forming a conspicuous bar, widest above. *Adult male in winter:* Black of head entirely replaced by streaked brownish, the throat and chest also more or less streaked with dusky; otherwise much as in summer, but middle and greater wing-coverts distinctly tipped with white. *Adult female in summer:* Much like winter male, but smaller, paler, and grayer, without deep black or pure white on lesser wing-coverts; *in winter*, similar, but more buffy. *Male:* Length 6.40–6.50, wing 3.60–3.70. *Female:* Length about 5.50–6.00, wing 3.45–3.60. *Eggs* .83 × .59, similar to those of *C. lapponicus*, but averaging lighter in color, the whitish, distinctly spotted style prevailing. *Hab.* Interior of Arctic America (chiefly Mackenzie River Valley) in summer, breeding north to Arctic coast and upper Yukon Valley; south, in winter, over Great Plains and prairies to Illinois, Texas, etc..................... 537. **C. pictus** (Swains.). **Smith's Longspur.**

*a*². Wing not more than 3.50; all the tail-feathers (except middle pair) with basal portion of inner webs white (outer webs also, except two middle pairs).

Adult male in summer: Top of head, stripe behind eye, spot on lower part of ear-coverts, chest, breast, and belly, black, the lower parts sometimes touched with rufous or chestnut; hind-neck deep rufous; broad superciliary stripe, chin, and throat white; cheeks pale buff, this sometimes overspreading lores, ear-coverts, chin, and upper throat; *in full plumage*, the lesser wing-coverts deep black, with posterior row pure white. *Adult male in winter:* Black of head and lower parts more or less obscured or even concealed by light brownish or dull buffy tips to the feathers; otherwise, essentially as in summer. *Adult female:* Above light grayish buffy brown, streaked with dusky; beneath pale grayish buffy brown, or dull grayish buff, the breast and belly sometimes streaked with darker; under tail-coverts dull buffy whitish. (Plumage softer and colors more blended in winter.) *Young:* Above dusky, the feathers edged and margined with dull whitish and pale brownish buff; wing-coverts tipped with dull whitish; an indistinct streaked whitish superciliary stripe; ear-coverts streaked dusky and pale brownish; malar region, chin, and throat white, flecked, more or less, with grayish dusky; rest of lower parts dull grayish buff, streaked, especially on breast, with dusky. Length 5.25–6.50, wing 3.20–3.50. *Eggs* .75 × .56, dull white, pinkish white, buffy white, or greenish white, distinctly speckled or spotted with various shades of brown and blackish. *Hab.* Great Plains, north to the Saskatchewan; south, in winter, to Texas, New Mexico Arizona, and table-lands of Mexico.

538. **C. ornatus** (Towns.). **Chestnut-collared Longspur.**

GENUS RHYNCHOPHANES BAIRD. (Page 383, pl. CVIII., fig. 1.)

Species.

Tail-feathers (except middle pair) white, broadly tipped with black (outer feathers almost entirely white). *Adult male in summer:* Middle, and posterior lesser, wing-coverts rufous; crown, rictal stripe, and crescentic patch on chest black; sides of head grayish; back, etc., gray or brownish, streaked with dusky; lower parts (except chest) white, tinged laterally with grayish. *Adult male in winter:* Crown and other upper parts dull brownish buff, streaked with dusky; black rictal streak obsolete, and black patch on chest hidden by light dull buffy tips to feathers. *Adult female:* Similar to winter male, but without concealed black on chest or rufous on wing-coverts; the colors brownish above and dull buffy beneath in winter, grayer above and whiter beneath in summer. *Young:* Upper parts dusky, the feathers broadly bordered with pale grayish buff; beneath white, distinctly washed with buff across chest, where sometines indistinctly streaked. Length about 5.12–6.50, wing 3.30–3.80, tail 2.25–2.80. *Nest* on ground in open places, composed of dried grasses, etc., lined with the same, usually mixed with hair and feathers. *Eggs* 3–6, .79 × .60, similar to those of *Calcarius ornatus*, but usually with ground-color more olive. *Hab.* Great Plains, breeding from western Kansas north to the Saskatchewan, migrating south, in winter, through Texas, New Mexico, and Arizona to plateau of Mexico...................... 539. **R. mccownii** (LAWR.). **McCown's Longspur.**

GENUS POOCÆTES BAIRD. (Page 384, pl. CVIII., fig. 2.)

Species.

Adult: Above brownish or brownish gray, everywhere streaked with dusky; lesser wing-coverts more or less distinctly rusty, sometimes inclining to rufous; outer tail-feathers partly white; lower parts dull white, streaked along sides of throat and across chest with dark grayish brown. *Young:* Similar to adult, but markings less sharply defined. *Nest* on ground, in open grassy places, composed of dried grasses, etc. *Eggs* 3–6, pale buffy, pinkish buffy, or dull whitish, stained with rusty brownish and speckled or otherwise marked with a deeper shade of the same, usually mixed with darker spots or lines.

a^1. Colors browner, with broader streaks; wing and tail averaging shorter, and bill stouter; length 5.50–6.70, wing 2.95–3.40 (3.17), tail 2.40–2.75 (2.57), exposed culmen .38–.45 (.42), depth of bill at base .30–.35 (.32), tarsus .80–.87 (.83). *Eggs* .81 × .60. *Hab.* Eastern United States, north to Nova Scotia and Ontario, west to edge of Great Plains, breeding from Virginia, Kentucky, and Missouri northward............ 540. **P. gramineus** (GMEL.). **Vesper Sparrow.**

a^2. Colors grayer, with narrower streaks; wing and tail averaging longer, and bill more slender; length about 6.00–6.75, wing 3.00–3.50 (3.27), tail 2.40–2.80 (2.65), exposed culmen .40–.48 (.43), depth of bill at base .25–.28 (.26), tarsus

.82–.90 (.84). *Eggs* .84 × .60. *Hab.* Western North America, north into British America, east to Manitoba and eastern border of the Great Plains, south to plateau of Mexico.

(59.) 540*a*. **P. gramineus confinis** Baird. **Western Vesper Sparrow.**

Genus AMMODRAMUS Swainson. (Page 384, pl. CVIII., figs. 3–7; pl. CIX., fig. 1.)

Species.

Common Characters.—Upper parts conspicuously streaked (except in *A. maritimus*), the chest and sides also streaked in most species; some species with the edge of the wing and a supraloral streak yellow. *Nest* on ground, in grassy places, or in grass or sedges in marshes. *Eggs* 3–6, speckled or spotted.

a^1. Outer pair of tail-feathers longer than middle pair; difference between length of tail and wing much greater than length of bill from nostril (the wing much the longer), and depth of bill at base much less than its length from nostril.

b^1. Tail slightly emarginate, or double-rounded, the depth of the emargination much less than the distance from eye to nostril, the feathers broader and less pointed at tip; no buff on crown. *Nest* on ground, in meadows or other grassy places. *Eggs* pale brownish, varying to dull whitish, or greenish white, spotted, speckled, or blotched with brown, occasionally with a few darker lines or spots. (Subgenus *Passerculus* Bonap.)

c^1. Culmen straight or even depressed (concave) in middle portion, the bill decidedly compressed; primaries exceeding tertials by more than length of exposed culmen; upper parts conspicuously streaked with blackish.

d^1. Exposed culmen not longer than hind-toe, without claw, and wing more than seven times as long as exposed culmen.

Above pale grayish, the top of head and back streaked with pale brown and blackish, the latter enclosed as a narrower streak within the former; median stripe on crown dull light grayish buff or dull buffy whitish; superciliary stripe similar, but paler, rarely yellowish anteriorly; outer surface of greater wing-coverts and tertials pale buffy brown; malar stripe pale buff or whitish; lower parts white tinged with pale brownish buff along sides (sometimes across chest also), the chest and sides streaked with brown (darker medially); length 6.00–6.75 (6.50), wing 2.85–3.20 (3.02), tail 2.25–2.55 (2.38), exposed culmen .38–.45 (.41), depth of bill at base .25–.28 (.26), tarsus .85–.95 (.93). *Eggs* .81 × .62. *Hab.* Breeding on Sable Island, Nova Scotia; in winter, migrating along Atlantic coast, south to Virginia and coast of Texas... 541. **A. princeps** (Mayn.). **Ipswich Sparrow.**

d^2. Exposed culmen longer than hind-toe, without claw, and wing less than seven times as long as exposed culmen.

Above grayish brown, streaked with black, the broad black streaks on back edged with narrower dull whitish or light buffy grayish streaks; superciliary stripe usually decidedly yellow, especially anteriorly, rarely without yellow; beneath white, sometimes slightly tinged with buffy laterally and across chest (especially in winter), the sides of throat, chest, sides, and flanks streaked with blackish. *Young* essentially similar to adults, but lighter streaks of upper parts more buffy, dusky streaks of lower parts less sharply defined, and superciliary stripe usually without yellow, and finely streaked with dusky.

e^1. Superciliary and median crown-stripes very distinct; flanks rather narrowly streaked; lower tail-coverts usually without visible streaks.

f^1. Wing averaging more than 3.00, and never (?) less than 2.90.

General tint above light grayish brown, with broad black and narrower light grayish streaks of back sharply contrasted; superciliary stripe usually decidedly yellow throughout (brighter anteriorly); length about 5.80–6.15, wing 2.90–3.20 (3.07), tail 2.10–2.40 (2.24), exposed culmen .40–.50 (.46), depth of bill at base .25–.32 (.29), tarsus .85–.95 (.90). *Hab.* Northwest coast, from Unalashka eastward and southward (to northern California in winter?)......... 542. **A. sandwichensis** (GMEL.). **Sandwich Sparrow.**

f^2. Wing averaging much less than 3.00, and never (?) more than 2.90.

g^1. Bill stouter (usually more than .22, and averaging .24, deep at base).

Colors much as in *A. sandwichensis*, but averaging browner, with superciliary stripe less continuously or conspicuously yellow; length about 4.85–5.50, wing 2.60–2.90 (2.73), tail 1.90–2.20 (2.07), exposed culmen .38–.43 (.40), depth of bill at base .21–.27 (.24), tarsus .78–.90 (.82). *Eggs* .78 × .56. *Hab.* Eastern North America, breeding from northern United States to Labrador and Hudson's Bay Territory.

542*a*. **A. sandwichensis savanna** (WILS.). **Savanna Sparrow.**

g^2. Bill smaller and more slender (usually less than .22, and averaging only .21, deep at base).

h^1. Paler and grayer, averaging more so than *A. sandwichensis;* length 4.75–5.90, wing 2.65–2.90 (2.80), tail 1.95–2.30 (2.14), exposed culmen .37–.40 (.39), depth of bill at base .20–.22 (.21), tarsus .75–.85 (.80). *Eggs* .75 × .55. *Hab.* Western North America, except (in general) Pacific coast; breeding from Rocky Mountain plateau north to the Yukon district of Alaska, migrating south, in winter, to Mexico..... 542*b*. **A. sandwichensis alaudinus** (Bonap.). **Western Savanna Sparrow.**

h^2. Darker and browner, averaging more so than *A. savanna*, with the breast and sides usually more heavily (sometimes more thickly) streaked, the whole head often suffused with yellow; wing 2.50–2.75 (2.65), tail 1.95–2.15 (2.02), exposed culmen .40–.43 (.41), depth of bill at base .21–.25 (.22), tarsus .65–.80 (.79). *Eggs* .75 × .56. *Hab.* Salt marshes about San Francisco Bay, California.

542*c*. **A. sandwichensis bryanti** Ridgw. **Bryant's Marsh Sparrow.**

e^2. Superciliary and median crown-stripes usually very indistinct (sometimes nearly obsolete); longer lower tail-coverts streaked with black (streaks rarely concealed).

Similar to *A. sandwichensis bryanti*, but upper parts more heavily streaked with black on a much more uniform and more olivaceous brown ground, sides of head and neck darker, anterior portion of superciliary stripe duller, more olivaceous, yellow, lower parts more thickly and heavily marked with black, wing and tail shorter, and bill larger; length about 5.00–5.25, wing 2.45–2.70 (2.58), tail 1.80–2.10 (1.97), exposed culmen .40–.50 (.44), depth of bill at base .21–.25 (.23), tarsus .78–.85 (.82). *Hab.* Salt marshes of southern California, south to Todos Santos Island, Lower California.

543. **A. beldingi** Ridgw. **Belding's Marsh Sparrow.**

c^2. Culmen regularly curved from the base, without depression in middle portion, the bill more swollen; primaries exceeding secondaries by less than length of exposed culmen; upper parts indistinctly streaked with darker.

d^1. Bill from nostril .36, or more; depth of bill at base .26, or more; general color above light brownish gray or grayish brown;

length about 5.30, wing 2.55–2.95 (2.71), tail 1.95–2.30 (2.11), exposed culmen .48–.52 (.49), depth of bill at base .26–.29 (.28), tarsus .80–.95 (.87). *Hab.* Coasts of southern California, Lower California, and Sonora; south, in winter, to Cape St. Lucas and Guaymas.

544. **A. rostratus** Cass. **Large-billed Sparrow.**

d^2. Bill from nostril only .32, depth of bill at base only .22; general color above dull brownish slate; length about 5.00–5.15, wing 2.55, tail 1.95, culmen .45, tarsus .82. *Hab.* Vicinity of Cape St. Lucas.................. 544*a*. **A. rostratus guttatus** (Lawr.). **St. Lucas Sparrow.**

b^2. Tail deeply emarginate, the lateral pair of feathers longest, the depth of the emargination equal to distance from eye to nostril, the feathers all narrow and pointed at tip; crown buff, streaked with black laterally. (Subgenus *Centronyx* Baird.)

Adult: Head ochraceous or buffy, deepest on crown, nearly or quite white on chin and throat; top of head streaked with black, especially laterally; maxillary stripe bordered above and below by blackish rictal and submalar stripes; lower parts white, the chest, sides, and flanks streaked with black; upper parts light brownish, varied by lighter edgings and blackish spotting. *Young:* Similar to adult, but feathers of crown and back distinctly bordered with buffy, and streaks on chest less sharply defined. *In winter*, the buffy coloring much more pronounced than in summer, strongly tingeing chest and sides. Length 5.10–5.85, wing 2.65–3.05. *Nest* on ground, in open grassy situations, composed of dried grasses, etc. *Eggs* 3–5, .79 × .59, whitish (varying in tint), spotted with reddish brown and lined with black. *Hab.* Great Plains, from Dakota and Montana to the Saskatchewan in summer; south, in winter, to Texas, New Mexico, and Arizona.

545. **A. bairdii** (Aud.). **Baird's Sparrow.**

a^2. Outer pair of tail-feathers shorter than middle pair; difference between length of tail and wing not greater than length of bill from nostril, or else tail longer than wing and much graduated ("*Coturniculus*" *lecontei*), or depth of bill at base equal to its length from nostril ("*Coturniculus*" *savannarum*).

b^1. Crown divided by a very distinct lighter median stripe, between two lateral blackish ones. *Nest* on ground, bulky, with deep cavity, often more or less arched over on top, composed of dried grasses. *Eggs* 3–5, white, speckled or spotted, chiefly on larger end, with reddish brown, sometimes mixed with a few small blackish markings and touches of lilac-gray. (Subgenus *Coturniculus* Bonap.)

c^1. Tail double-rounded, the lateral feathers only a little shorter than middle pair (difference between their tips much less than length of bill from nostril), the middle pair much shorter than next (longest) pair; bill stout, its depth at base equal to or greater than length from nostril. *Adult:* Crown blackish or dark brown, streaked with light grayish buffy and divided by a very distinct median line of pale grayish buff; rest of upper parts mixed grayish, buffy, and reddish brown, spotted with black; sides of head, chin, throat, chest, and sides plain buffy, the chest and sides indistinctly streaked with brown in winter; belly white; edge of wing yellow. *Young:* Essentially like adult, but with little if any reddish brown on upper parts, which have feathers more conspicuously bordered with pale buffy and dull whitish, and the median crown-stripe more ashy whitish; lower parts entirely dull buffy whitish, the chest distinctly streaked with dusky.

*d*¹. Darker colored, with (usually) shorter wing and tail and thicker bill; length about 4.85–5.20, wing 2.35–2.60 (2.43), tail 1.80–2.00 (1.87), exposed culmen .40–.47 (.43), depth of bill at base .28–.31 (.29), tarsus .75–.82 (.73). *Eggs* .73 × .58. *Hab.* Eastern United States and southern Canada, wintering in Gulf States, Bahamas, Cuba, Porto Rico, and Gulf coast of Mexico................ 546. **A. savannarum passerinus** (Wils.).
Grasshopper Sparrow.

*d*². Paler, with (usually) longer wing and tail, and more slender bill; length about 5.00–5.50, wing 2.50–2.60 (2.52), tail 1.75–2.00 (1.91), exposed culmen .40–.47 (.42), depth of bill at base .20–.28 (.25), tarsus .75–.80 (.77). *Eggs* .75 × .57. *Hab.* Western United States, east to Great Plains, south over table-lands of Mexico.............. 546*a*. **A. savannarum perpallidus** Ridgw.
Western Grasshopper Sparrow.

*c*². Tail graduated, the lateral feathers much shorter than middle pair (difference between their tips much greater than length of bill from nostril), the middle pair longest.

*d*¹. Tail not longer than wing, its graduation decidedly less than length of exposed culmen; bill stout, its depth at base nearly or quite equal to length from nostril; a blackish rictal and (usually) submalar streak. *Adult:* Head and neck buffy olive, the crown heavily streaked, except along middle line, with black, the hind-neck much more narrowly streaked; back and scapulars chestnut, feathers centred with black and narrowly edged or bordered with whitish; wings mainly chestnut; a blackish streak behind eye, another from corner of mouth, and another along each side of chin and upper throat (last sometimes indistinct); chin and throat pale buff or buffy whitish; chest, sides, and flanks deeper buffy, streaked with blackish; belly whitish. *Young:* Above dull brownish buffy, streaked and spotted with black; beneath light buff, the sides (but not chest) streaked with black; a distinct black streak from corner of mouth, but none on side of chin or throat.

Length about 4.75–5.25, wing 2.10–2.20, tail 1.90–2.05. *Eggs* .74 × .57. *Hab.* Eastern United States, north to Ontario and southern New England, west to edge of Great Plains; winters in Gulf States.. 547. **A. henslowii** (Aud.). **Henslow's Sparrow.** (60.)

d^2. Tail decidedly longer than wing, its graduation greater than length of exposed culmen; bill small and slender, its depth at base less than length from nostril; no dusky rictal or submalar streaks. *Adult:* Median crown-stripe buff anteriorly, the rest pale buffy grayish or dull buffy whitish; lateral stripes streaked blackish and brownish, the former usually predominating (nearly uniform black in summer); hind-neck streaked chestnut and pale buffy or buffy grayish; sides of head, including broad superciliary stripe, buffy (deeper, almost ochraceous, in winter, paler, sometimes nearly white, in summer), the lores and ear-coverts light grayish or brownish, the latter bordered above by a blackish streak, becoming larger posteriorly; anterior and lateral lower parts buffy, the sides and flanks streaked with blackish; belly white; upper parts brownish, spotted or striped with blackish and streaked with whitish or buffy. *Young:* General color buff, deeper above, paler beneath, the belly whitish; upper parts streaked and striped with blackish, the chest, sides, and flanks more narrowly streaked with the same. Length 4.40–5.50, wing 1.87–2.06, tail 1.87–2.25. *Nest* in damp or marshy meadows. *Eggs* about .75 × .50, speckled or spotted sparsely on larger end with brown and black (sometimes thickly speckled or sprinkled with brown). *Hab.* Great Plains and more western prairies, breeding from Dakota, Minnesota, etc., to Manitoba, migrating southward and eastward, in winter, through Illinois, Iowa, Kansas, etc., to South Carolina, and Gulf States from Florida to Texas.

548. **A. leconteii** (Aud.). **Le Conte's Sparrow.**

b^2. Crown without distinct median stripe. *Nest* on or near ground, in marshes, supported between upright stalks of sedges or coarse grasses (sometimes in low bushes), composed of dried grasses or sedges, the entrance occasionally through one side. *Eggs* 3–5, whitish speckled or spotted with brown. (Subgenus *Ammodramus* Swains.)

c^1. Edge of wing very pale yellowish, supraloral streak deep buff or ochraceous, like the rest of the very distinct superciliary stripe; malar stripe deep buff or ochraceous. (Above olivaceous, mixed or glossed with ashy, the sides of the back streaked with ashy, buffy, or whitish, the crown with two broad lateral stripes of sepia-brown enclosing a narrower and less distinct one of grayish; chest and sides more or less distinctly washed with buff or ochraceous (often deeply of this color) and streaked with dusky or grayish. *Young:* Above dull ochraceous, the back broadly streaked with black, and sides of the crown chiefly of the latter color; lower parts entirely buff, streaked on chest with dusky.)

d^1. Colors of upper part usually not sharply contrasted; chest often nearly white, and frequently with the streaks dusky, or blackish, and very sharply defined; length 4.80–5.85. *Male:* Wing 2.17–2.36 (2.27), tail 1.90–2.25 (2.06), culmen .53–.59 (.57), depth of bill at base .23–.27 (.25), tarsus .86–.91 (.89). *Female:* Wing 2.18–2.42 (2.23), tail 1.90–2.13 (1.98), culmen .53–.58 (.56), depth of bill at base .23–.26 (.24), tarsus .85–.87 (.86). *Eggs* .76 × .57, brownish white, finely speckled or sprinkled with dull rusty brown. *Hab.* Salt marshes of Atlantic coast, from Prince Edward Island and Nova Scotia to North Carolina.

(61.) 549. **A. caudacutus** (Gmel.). **Sharp-tailed Sparrow.**

d^2. Colors of upper parts usually very sharply contrasted, especially the chalky white streaks of back, as compared with the rich umber-brown ground-color; chest and sides usually very deep buff or ochraceous, never (?) very distinctly or sharply streaked with dusky. *Male:* Wing 2.12–2.33 (2.24), tail 1.98–2.21 (2.07), culmen .49–.53 (.51), depth of bill at base .23–.26 (.25), tarsus .80–.87 (.84). *Female:* Wing 2.15–2.20 (2.18), tail 1.83–2.09 (1.99), culmen .50–.52 (.51), depth of bill at base .23–.26 (.25), tarsus .82–.85 (.83). *Hab.* Fresh-water marshes of eastern United States, chiefly in Mississippi Valley; east during migrations to marshes of Atlantic coast (Massachusetts to South Carolina)........... 549*a*. **A. caudacutus nelsoni** Allen. **Nelson's Sparrow.**

c^2. Edge of wing and supraloral streak yellow; no distinct superciliary stripe; malar stripe whitish.

d^1. Above nearly plain olivaceous, tinged with ashy, the wings and tail more brownish; beneath grayish white, the chest streaked with dull grayish. *Young:* Crown and back broadly streaked with black; lower parts buffy white, the chest and sides streaked with dusky. Length about 5.25–6.00, wing 2.40–2.55, tail 2.10–2.25, culmen .60–.67, tarsus .90–.95. *Eggs* .80 × .62, greenish white or brownish white, coarsely speckled with umber-brown. *Hab.* Salt marshes of Atlantic and Gulf coasts, from Massachusetts to Texas.. 550. **A. maritimus** (Wils.). **Seaside Sparrow.** **(62.)**

d^2. Above black, indistinctly streaked with olive and grayish; beneath white, broadly streaked on breast and sides with black; edge of wing and short stripe on sides of forehead bright yellow; length 5.75–6.25 (5.95), wing 2.25–2.40, tail 2.10–2.50, culmen .50–.60, tarsus .80–.92. *Hab.* Southeastern Florida (marshes of Indian River)............................ 551. **A. nigrescens** Ridgw. **Dusky Seaside Sparrow.**

GENUS **CHONDESTES** SWAINSON. (Page 383, pl. CIX., fig. 2.)

Species.

COMMON CHARACTERS.—Above brownish or brownish gray, the back streaked with blackish; tail-feathers (except middle pair) broadly tipped with white; lower parts chiefly white. *Adult:* Crown and ear-coverts chestnut, the former divided medially by a pale brownish gray or grayish buff stripe (whitish anteriorly), the chestnut passing anteriorly into blackish; a black streak across lores, and one along each side of throat; a small black spot on middle of chest. *Young:* Crown and ear-coverts grayish brown, the former streaked with blackish; whole plumage usually more or less suffused with buffy, and chest streaked with dusky. *Nest* on ground or in bushes or trees, composed of dried grasses, etc. *Eggs* 3–5, pure white (sometimes with a faint bluish or brownish tinge), speckled and lined, chiefly on larger end, with black and dark brown.

*a*¹. Averaging darker and grayer, with black streaks on back broader and chestnut of head rather darker; wings and tail shorter; length 5.75–6.75, wing 3.20–3.80 (3.49), tail 2.70–3.00 (2.82). *Eggs* .80 × .61. *Hab.* Mississippi Valley, north to southern Michigan, east to Ohio (casually to Atlantic coast), south to eastern Texas, Louisiana, etc.

552. **C. grammacus** (SAY). **Lark Sparrow.**

*a*². Averaging paler and browner, with black streaks on back narrower, and chestnut of head rather lighter; wings and tail longer; length 6.50–7.25, wing 3.35–3.70 (3.58), tail 2.60–3.35 (2.93). *Eggs* .80 × .63. *Hab.* Western United States, east to Great Plains and middle Texas, south over table-lands of Mexico.

552*a*. **C. grammacus strigatus** (SWAINS.). **Western Lark Sparrow.**

GENUS **ZONOTRICHIA** SWAINSON. (Page 385, pl. CIX., fig. 4.)

Species.

COMMON CHARACTERS.—Back brownish, streaked with blackish; lower back, rump, and upper tail-coverts plain olive-brownish or grayish brown; wing with two white bands; tertials and uppermost greater wing-coverts broadly edged with chestnut, this passing terminally into white; tail without white; lower parts plain whitish or grayish (streaked in young). *Adults* with head wholly black (*Z. querula*), or else with a broad black stripe on each side of crown. *Nest* on or near ground, in open places (sometimes in bushes), composed of dried grasses, etc. *Eggs* 3–5, pale greenish blue, greenish white, or buffy whitish, spotted, speckled, or sprinkled with rusty brown.

*a*¹. Top of head black, without trace of median stripe, or of yellow; sides and flanks light buffy brown, broadly streaked with dusky; *adult* with whole chin and throat, lores, and top of head uniform black.

Adult: Sides of head dull brownish white or light grayish brown; rest of head mainly uniform black; breast (except centrally) and belly pure white. *Immature:* Top of head black, but this much obscured by whitish or buffy borders to feathers; whole side of head, including sides of forehead and superciliary region, buffy; chin and throat white, bordered along each side by a blackish streak (sometimes blotched with black); middle of chest blotched or spotted with black or dark brown; otherwise like adult; length 6.75–7.75, wing 3.20–3.60 (average about 3.40), tail 3.30–3.75. *Eggs* (identification somewhat doubtful), .87 × .68, buffy whitish, thickly speckled with burnt-umber, slightly mixed with purplish gray. *Hab.* More eastern Great Plains and more western prairies, breeding from eastern Montana (?) north to Manitoba; south, in winter, to Texas, and east to Iowa, western Illinois, Missouri, etc.

553. ***Z.* querula** (NUTT.). **Harris's Sparrow.**

a^2. Top of head black or brown, divided by a distinct median stripe of white, buff, yellow, or gray; sides and flanks grayish brown, without distinct streaks, or else with sides of forehead yellow and back rusty brown; *adults* with chin and throat whitish or light grayish.

b^1. Back gray, grayish brown, or smoky brown, streaked with brown or black; chin and throat not abruptly white; sides of forehead not yellow.

c^1. Middle crown-stripe entirely white, ashy, or buffy; top of head without yellow.

Adults with lateral crown-stripes deep black, median stripe white or pale ashy; a broad white superciliary stripe, below which is a narrower black stripe behind eye (sometimes continued in front of it). *Immature,* with lateral crown-stripes and streak behind eye chestnut-brown or burnt-umber brown, middle crown-stripe dull buffy, superciliary stripe dull light buffy grayish.

d^1. Edge of wing white; white or buffy median crown-stripe broad as or broader than lateral black or brown stripes; *adults* with back ashy streaked with burnt-umber or vandyke-brown, and chest ashy.

e^1. Lores black or dark brownish, the white, grayish, or dull buff superciliary stripe not reaching to bill; length 6.50–7.50, wing 3.00–3.30 (3.19), tail 2.80–3.20 (3.00), exposed culmen .38–.45 (.41), tarsus .90–.98 (.91). *Eggs* .85 × .61, pale greenish blue, varying to pale cinnamon-brown, speckled, sprinkled, or spotted with reddish brown. *Hab.* Breeding from higher mountain ranges of western United States, Sierra Nevada, Rocky Mountains, and eastward, north of Great Lakes, to Labrador; in winter, over whole of United States, and south into Mexico.

554. ***Z.* leucophrys** (FORST.). **White-crowned Sparrow.**

e^2. Lores entirely light ashy or buffy, continuous with the superciliary stripe of same color; length 6.00–7.17, wing 2.90–3.30 (3.09), tail 2.85–3.10 (2.98), exposed culmen .38–.42 (.40), tarsus .85–.92 (.88). *Eggs* .86 × .60, similar to those of *Z. leucophrys*, but cinnamon-colored or rusty style predominating, instead of the reverse. *Hab.* Breeding throughout Alaska (except coast east and south of the peninsula), and eastward through Mackenzie River basin; in winter, south throughout western United States into Mexico, east to edge of Great Plains (casually farther)...... **555. *Z.* leucophrys intermedia** RIDGW. **Intermediate Sparrow.**

d^2. Edge of wing pale yellow; white, ashy, or buffy median crown-stripe usually narrower than black or brown lateral stripes; *adult* with back smoky brown or olive-brown, striped with dark sepia-brown or sooty blackish, and chest brownish gray.

Lores ashy or otherwise light-colored, as in *Z. intermedia;* length about 5.75–6.75, wing 2.70–3.20 (2.92), tail 2.60–3.00 (2.75), exposed culmen .35–.48 (.41), tarsus .82–1.00 (.91). *Eggs* .84 × .64, colored like those of *Z. intermedia. Hab.* Coast ranges of California and north to British Columbia. **556. *Z.* leucophrys gambeli** (NUTT.). **Gambel's Sparrow.**

c^2. Middle crown-stripe yellow anteriorly (whole forehead suffused with yellow in younger birds).

Adult: Median crown-stripe yellow for anterior half, or more, then ashy. *Immature* birds with yellow duller and more or less streaked or flecked with dusky, the lateral stripes poorly defined, brownish, streaked with darker. (In general coloring, except on head, closely resembling *Z. gambeli.*) Length about 7.00–8.00, wing 3.00–3.40, tail 3.25–3.50. *Eggs* .82 × .61, colored like the more distinctly spotted style of *Z. leucophrys. Hab.* Pacific coast, breeding from northern California (?) north to Norton Sound, Alaska; during migrations, east, irregularly, to Rocky Mountains, casually to Wisconsin.

557. *Z.* coronata (PALL.). **Golden-crowned Sparrow.**

b^2. Back rusty brown, or chestnut, streaked with blackish; chin and upper throat white, abruptly contrasted with ash-gray of lower throat and chest; sides of forehead yellow.

Adult: Top of head with a narrow grayish white median and two broad black lateral stripes; superciliary stripe bright yellow anteriorly (back to above eye), the rest whitish. *Immature:* Superciliary and median crown-stripes dull buffy or light brownish, the former more or less distinctly yellowish anteriorly; lateral crown-stripes dark brownish; ash-gray of ear-coverts and chest obscured by brownish. *Young:* Broad lateral crown-stripes dull vandyke-brown, narrow median stripe dull whitish or pale brownish; superciliary stripe dirty brownish white, scarcely, if at all, yellowish anteriorly; throat not distinctly whitish, and chest dirty brownish white, streaked with dusky. Length 6.30–7.65, wing 2.80–3.15, tail 3.05–3.35. *Eggs* .83 × .59, similar in color to those of *Z. intermedia*. *Hab.* Eastern North America, breeding from northern United States northward; west to edge of Great Plains, casually to Utah and California...... 558. **Z. albicollis** (Gmel.). **White-throated Sparrow.**

Genus SPIZELLA Bonaparte. (Page 385, pl. CIX., fig. 5.)

Species.

Common Characters.—Back and scapulars brownish, streaked with black; lower back, rump, and upper tail-coverts plain grayish or grayish brown, or else very indistinctly streaked; greater wing-coverts (and usually middle coverts also) tipped, more or less distinctly, with white or light brownish; lower parts plain whitish, grayish, or pale brownish (belly always white) in adult, streaked with dusky in young, except of *S. atrigularis.*

a^1. With head more or less conspicuously marked, but without black on chin or throat; *young*, streaked beneath.

  b^1. Wing with two distinct white bands; lower mandible yellow; adult with dusky spot in centre of chest. (*Adult:* Top of head and streak behind eye deep rufous; rest of head and neck plain ashy, the hind-neck tinged with brown; back mixed rufous and light tawny or dull buffy, streaked with black; lower parts pale ashy anteriorly and laterally, the sides and flanks tinged with buffy (strongly so in winter). *Young:* Top of head dull brownish, streaked with dusky; superciliary stripe and sides of head and neck dull whitish, finely streaked with darker; chest pale dull buffy, tinged laterally with rusty, and distinctly streaked with dusky. *Nest* on ground or in low bushes, composed of dried grasses, feathers, etc. *Eggs* 3–5, colored like those of *Zonotrichia leucophrys.*)

    c^1. Plumage darker throughout, the ground-color of back largely rusty or rufous, and the black streaks broader; rufous of crown darker, and never with more than a slight indication of median ashy stripe; outer webs of greater wing-coverts and tertials bright rufous or rusty; whitish or light ashy edgings to tail-feathers narrower, wings and tail shorter, bill rather stouter, etc.; length about 6.00–6.50, wing 2.80–3.10 (2.95), tail 2.60–2.90 (2.70). *Eggs* .75 × .58. *Hab.* Eastern North America, breeding in Labrador and region about Hudson's Bay; south, in winter, through eastern United States, west to edge of Great Plains.
    559. **S. monticola** (Gmel.). **Tree Sparrow.**

    c^2. Plumage paler throughout, the ground-color of back with little if any rusty or rufous, and the black streaks narrower; rufous of crown paler and frequently (especially in winter) with distinctly indicated (sometimes broad and continuous) median ashy stripe; outer webs of greater wing-coverts and tertials paler, more buffy or ochraceous; whitish edgings to tail-feathers broader, wings and tail longer, bill rather more slender, etc.; length about 6.00–6.75, wing 2.80–3.15 (3.07), tail 2.65–3.05 (2.85). *Eggs* .78 × .55. *Hab.* Western North America, breeding in Alaska (and for an undetermined distance southward), wintering in western United States, south to Texas, New Mexico, and Arizona.

559*a*. **S. monticola ochracea** Brewst. **Western Tree Sparrow.**

*b*². Wing without two distinct white bands; lower mandible without yellow; adult without dusky spot in centre of chest.

*c*¹. Wing decidedly longer than tail.

*d*¹. Tarsus less than twice as long as culmen; a distinct dusky streak behind eye.

*e*¹. Colors lighter, the adult with crown deep rufous and lower parts whitish or very pale ashy. *Summer adult:* Top of head rufous, sometimes with a more or less distinct indication of an ashy median line; forehead black, divided by a white median line; a broad white or pale grayish superciliary stripe, bounded below by a narrow blackish stripe through eye; ear-coverts and sides of neck ashy; lower parts white or ashy white, more tinged with ashy on sides; bill black. *Winter adult:* Essentially similar to summer plumage, but colors duller and darker, more or less tinged with brown on lower parts, black on forehead indistinct or obsolete, and rufous of crown usually more or less streaked with dusky; bill cinnamon-brownish. *Young:* Top of head light brownish, distinctly streaked with blackish; superciliary stripe buffy whitish, narrowly streaked with dusky; breast, etc., streaked with dusky. *Nest* in trees or bushes, often about houses, composed of slender grass-stems, etc., and lined with horse-hairs. *Eggs* 3–5, light greenish blue, speckled, chiefly on larger end, with black and brown.

*f*¹. Darker colored, the back decidedly tinged with rusty and more broadly streaked with black, ear-coverts usually deeper gray, more distinctly contrasted with purer white superciliary stripe and throat, the wings and tail averaging decidedly shorter; length 5.00–5.85, wing 2.55–2.90 (2.75), tail 2.20–2.60 (2.37). *Eggs* .69 × .50. *Hab.* Eastern North America, north in the interior to Great Slave Lake, west to Great Plains; wintering from about 40° southward.

560. **S. socialis** (Wils.). **Chipping Sparrow.**

f^2. Paler, the back light brown, with little if any rusty tinge, and more narrowly streaked with black, ear-coverts usually paler gray, contrasting less strongly with duller or more grayish white of superciliary stripe and throat, the wings and tail averaging decidedly longer; length 5.25–5.90, wing 2.65–2.90 (2.80), tail 2.40–2.70 (2.51). *Eggs* .67 × .50. *Hab.* Western North America, east to Rocky Mountains, north to beyond 60°, in summer; south, in winter, to southern Mexico.

560*a*. **S. socialis arizonæ** (Coues).
Western Chipping Sparrow.

e^2. Colors darker, the adult with crown dark chestnut and lower parts ashy, becoming whitish only on belly and under tail-coverts. (Otherwise like *S. socialis* in colors.) Wing 2.80, tail 2.45, culmen .40, tarsus .68. *Hab.* Highlands of Guatemala and Honduras.

S. pinetorum Salv. **Guatemalan Chipping Sparrow.**[1]

d^2. Tarsus more than twice as long as culmen; no dusky streak behind eye.

Adult: Top of head dull tawny brown, indistinctly streaked with darker brown; rest of head, including anterior portion of forehead, plain ashy, becoming gradually paler (almost white) on chin and throat; chest very pale grayish buffy, the sides and flanks similar but rather deeper; belly and under tail-coverts white; back grayish tawny, broadly streaked with black; middle wing-coverts tipped with pale buffy, but greater coverts without light tips; bill cinnamon; length (skin) about 4.50, wing 2.70, tail 2.50, culmen .35, tarsus .72. *Hab.* New Mexico (vicinity of Silver City) and south over eastern part of Mexican plateau.

564. **S. wortheni** Ridgw. **Worthen's Sparrow.**[2]

c^2. Wing not longer than tail (usually shorter).

d^1. Upper parts with more or less of rusty, and top of head and hind-neck without dusky streaks. (*Adult:* Top of head with two rusty or sandy brownish lateral stripes and a dull grayish median stripe, the latter often indistinct, sometimes nearly obsolete; back streaked with black, on a uniform rusty, rusty and buffy grayish, or chiefly buffy grayish, ground; both rows of wing-coverts tipped with whitish or light buffy; a rusty streak behind eye, enlarged to a spot posteriorly, sides of head otherwise grayish, but tinged with brownish or buffy in winter; sides of breast with a rusty spot; lower parts whitish, tinged with grayish or buffy, or both, anteriorly; bill reddish cinnamon. *Young:* Essentially like adult, but colors duller and more suffused, markings of head much less distinct, and lower parts, especially breast, streaked with dusky.)

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[1] *Spizella pinetorum* Salvin, P. Z. S. 1863, 189.

[2] It is somewhat doubtful whether this species is correctly placed in the section characterized by having the wing longer than the tail, since in the type, and only known, specimen the tail-feathers are very much worn. In case, however, of its being determined by perfect specimens to belong in the same section with *S. pusilla* and allies, it can be easily recognized by its peculiar coloration, as described above.

e^1. Color much more rusty above, with median grayish crown-stripe usually very narrow and indistinct (sometimes obsolete), and wings and tail shorter; length 5.10–6.00, wing 2.45–2.70, tail 2.50–2.80. *Nest* on or near ground in old weed-grown fields, thickets, etc., composed mainly of slender dry grass-stems. *Eggs* 3–5, .68 × .51, white, greenish white, or buffy white, speckled with reddish brown. *Hab.* Eastern United States and southern Canada, west to edge of Great Plains (eastern Nebraska, Fort Smith, Arkansas, eastern Texas, etc.).

563. **S. pusilla** (Wils.). **Field Sparrow.**

e^2. Color much less rusty above, with median grayish crown-stripe always (?) broad and very distinct, the lateral crown-stripes and postocular streak much paler and less rusty brown, back pale grayish buffy, more narrowly streaked with black and slightly tinged or mixed with rusty, and wings and tail longer; length about 5.80–6.10, wing 2.60–2.80, tail 2.80–3.10. *Hab.* Great Plains, from southern Texas (Laredo, etc.) north to Wyoming Territory and western Nebraska.

563*a*. **S. pusilla arenacea** Chadb. **Western Field Sparrow.**[1]

d^2. Upper parts without any rusty, and top of head and hind-neck distinctly streaked with dusky.

e^1. Head distinctly striped; ear-coverts light buffy brown, in marked contrast with the very distinct broad superciliary and malar stripes of dull whitish, and ashy of sides of neck. *Adult:* Top of head pale raw-umber brown, broadly streaked with black and divided by a distinct median stripe of light brownish gray; light brown ear-coverts bordered above by a very distinct postocular streak of dark brown or dusky, and along lower edge by a rictal streak of the same; whitish malar streak usually bordered below by a more or less distinct grayish or brownish streak along each side of throat; hind-neck and sides of neck ashy, in more or less marked contrast with brown of ear-coverts and crown; back light brown, broadly streaked with black. (*In winter*, the colors much browner, obscuring gray of neck and strongly tingeing chest and sides.) *Young:*

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[1] *Spizella pusilla arenacea* Chadbourne, Auk, iii. April, 1886, 248.

Upper parts more buffy or "clay-colored," with blackish streaks broader and less sharply defined; dusky postocular and rictal streaks less distinct (sometimes nearly obsolete); chest, sides, and flanks streaked with dusky. Length about 5.00–5.75, wing 2.20–2.50 (2.39), tail 2.30–2.60 (2.44). *Nest* in bushes in open situations. *Eggs* 3–6, .66 × .49, light greenish blue, speckled, chiefly on larger end, with brown. *Hab.* Great Plains, north to the Saskatchewan, west to base of Rocky Mountains, east, irregularly, to Wisconsin and northern Illinois, south to Texas and New Mexico (in winter, to Lower California and over tablelands of Mexico to Guanajuato).

561. **S. pallida** (Swains.). **Clay-colored Sparrow.**

e^2. Head not distinctly striped, and ear-coverts not distinctly brownish. *Adult:* Top of head, hind-neck, back, and scapulars light grayish brown, streaked with blackish; sides of head nearly uniform light grayish brown, but ear-coverts perceptibly (not conspicuously or abruptly) browner, usually without distinct dusky streak along upper or lower margins; top of head without distinct median stripe (usually with merely a trace of such stripe). (*In winter*, not essentially different, but general cast of plumage perceptibly browner than in summer.) *Young:* Essentially like adult, but chest and sides streaked with dusky, and streaks on upper parts less sharply defined. Length 5.00–5.60, wing 2.35–2.55 (2.45), tail 2.35–2.70 (2.51). *Nest* and *eggs* like those of *S. pallida*, but the latter usually more distinctly marked, averaging about .68 × .49. *Hab.* Western United States, east to (and including) Rocky Mountains, south (in winter only ?) to northwestern Mexico.

562. **S. breweri** Cass. **Brewer's Sparrow.**

a^2. Head and neck plain grayish; chin and upper throat black in adult.

Adult: Head, neck, and lower parts plain ash-gray, changing to white on belly and lower tail-coverts; chin and upper throat black; back and scapulars rusty brownish, narrowly streaked with black. *Young:* Similar to adult, but black of chin and throat replaced by the general gray color. Length about 5.50–5.75, wing 2.40–2.50, tail 2.70–2.90. *Nest* in bushes. *Eggs* 3–5, .68 × .50, plain light greenish blue. *Hab.* Mexico, north to southern border of United States (lower Rio Grande to southern California); Lower California.

565. **S. atrigularis** (Cab.). **Black-chinned Sparrow.**

Genus JUNCO Wagler. (Page 385, pl. CIX., fig. 3.)

Species.

Common Characters.—*Adult:* Plumage chiefly plain grayish, entirely without streaks, and usually without distinct markings on wings; belly, under tail-coverts, and outer tail-feathers white. *Young:* Profusely streaked, both above and below, the ground-color of the lower parts everywhere dull whitish; outer tail-feathers white, as in the adult. *Nest* usually on ground, rather bulky, composed of dried grass-stems, etc., lined with softer materials. *Eggs* 3–5, whitish, usually more or less speckled with reddish brown.

a^1. Sides ash-gray, like chest, or, if inclining to pinkish, this color not abruptly defined against, or contrasted with, gray or dusky of chest.

b^1. Back gray, like chest; bill, in life, pale flesh-color, purplish horn-color, or pinkish white, with dusky tip; iris dark brown, or claret-color.

c^1. Wing usually with two distinct white bands; larger (length about 6.00–7.00, the wing averaging more than 3.25).

Uniform plumbeous-gray, the head not darker; bill, in life, livid pinkish, with dusky tip. *Male:* Wing 3.15–3.65 (3.44), tail 3.00–3.39 (3.20), culmen .52–.54 (.53), tarsus .85–.90 (.86). *Female:* Wing 3.23–3.48 (3.30), tail 3.10–3.28 (3.15), culmen .52–.54 (.53), tarsus .80–.88 (.84). *Hab.* Rocky Mountains, in Colorado and Wyoming, straggling east, in winter, to middle Kansas.

566. **J. aikeni** Ridgw. **White-winged Junco.**

c^2. Wing usually without trace of white bands; smaller (length about 5.50–6.25, the wing averaging less than 3.20).

d^1. Plumage slate-gray, the head perceptibly darker, approaching blackish slate (often nearly black anteriorly) in the male, the female (especially younger birds) often strongly tinged with brownish, the sides washed with light pinkish brown; bill, in life, delicate light flesh-color, or pinkish white. *Male:* Wing 3.00–3.25 (3.09), tail 2.68–2.90 (2.82), culmen .46–.51 (.49), tarsus .80–.86 (.83). *Female:* Wing 2.87–3.10 (2.95), tail 2.60–2.98 (2.74), culmen .47.–.50 (.49), tarsus .80–.85 (.83). *Eggs* .76 × .58, colored like those of *Spizella pusilla. Hab.* Northern North America, breeding from northern Maine to Alaska (except Pacific coast district, or south and east of the peninsula); in winter, whole of eastern United States, and sparingly westward to Pacific coast... 567. **J. hyemalis** (Linn.). **Slate-colored Junco.**

d^2. Plumage much as in *J. aikeni*, but softer and more decidedly plumbeous, the wing-bands always (?) obsolete; bill, in life, livid or purplish horn-color. *Male:* Wing 3.03–3.25 (3.17), tail 2.81–3.07 (2.97), culmen .50–.51 (.51), tarsus .88–.90 (.89). *Female:* Wing

2.98–3.10 (3.04), tail 2.80–2.86 (2.78), culmen .50–.51 (.50), tarsus .89. *Hab.* Higher portions of southern Alleghanies.

567*e*. **J. hyemalis carolinensis** Brewst. **Carolina Junco.**

b^2. Back rusty brown or rufous, decidedly different from color of chest.

c^1. Greater wing-coverts and tertials with outer webs chiefly or entirely gray, like rest of wing.

d^1. Bill light flesh-color or purplish white, and iris dark brown, or claret-color, as in *J. hyemalis;* head, neck, chest, sides, and upper parts except back, ash-gray, the belly rather abruptly white, and the back rusty or rufous; length about 6.00–6.50. *Male:* Wing 3.18–3.42 (3.28), tail 2.93–3.27 (2.99), culmen .50–.52 (.51), tarsus .80–.87 (.82). *Female:* Wing 2.95–3.26 (3.08), tail 2.85–3.07 (2.96), culmen .50–.52 (.51), tarsus .77–.85 (.81). *Eggs* .80 × .59, white, dull pinkish white, or greenish white, speckled (usually very minutely), chiefly on larger end, with reddish brown. *Hab.* Rocky Mountain district, breeding from Fort Bridger southward.

(63.) 569. **J. caniceps** (Woodh.). **Gray-headed Junco.**

d^2. Bill with upper mandible blackish, lower yellowish; iris brown; plumage as in *J. caniceps*, but paler beneath, the much paler ash of chest and sides fading gradually into white of belly; length about 6.25–6.60. *Male:* Wing 3.05–3.40 (3.25), tail 2.97–3.22 (3.11), culmen .49–.53 (.51), tarsus .77–.82 (.80). *Female:* Wing 3.10–3.20 (3.13), tail 2.93–3.10 (3.01), culmen .49–.52 (.50), tarsus .77–.81 (.79). *Eggs* .77 × .60, plain greenish white, sometimes with very minute reddish brown sprinkling or "dusting" in ring round larger end. *Hab.* Southern Rocky Mountains (New Mexico and eastern Arizona).

570*a*. **J. phæonotus dorsalis** (Henry). **Red-backed Junco.**

c^2. Greater wing-coverts and tertials with outer webs chiefly rusty or rufous. (Upper mandible blackish, lower yellowish, as in *J. cinereus dorsalis;* iris yellow.)

d^1. Outer tail-feather with more than half of the inner web white; rump gray (rarely tinged with olive); back bright rusty or rufous.

e^1. Rump and top of head slate-gray, the former sometimes tinged with olive; lower parts entirely dull whitish, shaded, more or less, with pale grayish anteriorly; wing 2.77–3.20 (3.00), tail 2.75–3.12 (2.94), culmen .51–.53 (.52), tarsus .83–.90 (.87). *Hab.* Highlands of Mexico.

J. phæonotus Wagl. **Mexican Junco.**[1]

e^2. Rump and top of head clear ash-gray, the former without olive tinge; lower parts usually decidedly ashy anteriorly and laterally; length about 6.25–6.50. *Male:* Wing 2.95–3.30 (3.28), tail 2.88–3.33 (3.18), culmen .50–.53 (.51), tarsus .83–.90 (.86). *Female:* Wing 2.95–3.20 (3.04), tail 2.82–3.18 (3.02), culmen .50–.53 (.51), tarsus .78–.87 (.84). *Eggs* .78 × .60, plain greenish white. *Hab.* Southern Arizona and adjacent parts of Mexico.

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[1] *Junco phæonotus* Wagl., Isis, 1831, 526.

570. **J. phæonotus palliatus** Ridgw. **Arizona Junco.**

d^2. Outer tail-feather with rather less than half of inner web white; rump and back olivaceous, the latter tinged with rusty.

Lower parts dull ash-gray inclining to whitish on belly; top of head dusky gray or slate-color; wing 3.02–3.13 (3.08), tail 2.98–3.07 (3.01), culmen .61–.62 (.61), tarsus .95–.98 (.97). *Hab.* Highlands of Guatemala.

J. alticola Salv. **Guatemalan Junco.**[1]

a^2. Sides distinctly light pinkish brown (vinaceous), or ochraceous, very different from color of chest.

b^1. Sides pinkish or vinaceous; bill, in life, pinkish, tipped with dusky, and iris dark brown, or claret-color (as in *J. hyemalis* and allies).

c^1. Wing nearly or quite seven times as long as culmen.

d^1. *Adult male* with head, neck, and chest black, or very dark slaty; back and scapulars umber-brown; length 6.25–6.75, wing 2.90–3.30 (3.09), tail 2.65–3.17 (2.85), culmen .45–.51 (.50), tarsus .77–.82 (.80), middle toe .54–.58 (.57). *Adult female* with head, etc., dull slate-gray, washed with brown on crown and hind-neck; otherwise much like male, but colors duller; length 5.65–6.75, wing 2.80–3.12 (2.91), tail 2.51–2.97 (2.76), culmen .48–.52 (.50), tarsus .78–.84 (.80), middle toe .53–.58 (.56). *Eggs* .75 × .58, similar in color to those of *J. hyemalis*. *Hab.* Western North America, breeding along Pacific coast, from California to Sitka.

(64.) 567*a*. **J. hyemalis oregonus** (Towns.). **Oregon Junco.**

d^2. *Adult male and female* (sexes essentially alike) with head, neck, and chest clear plumbeous, the lores blackish, in strong contrast; back and scapulars hair-brown. *Male:* Wing 3.15–3.40 (3.26), tail 2.92–3.33 (3.07), culmen .48–.52 (.50), tarsus .80–.88 (.82), middle toe .53–.57 (.55). *Female:* Wing 2.95–3.28 (3.11), tail 2.70–3.12 (2.94), culmen .49–.50 (.50), tarsus .75–.83 (.80), middle toe .52–.58 (.55). *Eggs* 4–5, .81 × .60, whitish, spotted with light reddish brown and lilac-gray, usually in ring or wreath round larger end. *Hab.* Rocky Mountain district, breeding from Fort Bridger northward.

(65.) 568. **J. annectens** (Baird). **Pink-sided Junco.**

c^2. Wing less than five times as long as culmen.

Adult (*sexes alike*): Above dull slaty, decidedly, but not abruptly, browner on the back; head, neck, and chest slate-grayish, paler on throat and chest, darker on crown; lores black. *Male:* Wing 2.70–2.85 (2.75), tail 2.50–2.60 (2.56), culmen .55–.58 (.58), tarsus .80–.85 (.84), middle toe .55–.60 (.56). *Female:* Wing 2.50–2.65 (2.57), tail 2.30–2.45 (2.40), tarsus .80–.85 (.81), middle toe .55–.60 (.56). *Eggs* .80 × .59, dull white, speckled, chiefly round larger end, with reddish brown. *Hab.* Guadalupe Island, Lower California... 572. **J. insularis** RIDGW. **Guadalupe Junco.**

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[1] *Junco alticola* Salvin, P. Z. S. 1863, 189.

*b*². Sides ochraceous, or cinnamon-buff. *Adult (sexes alike):* Entire back, scapulars, and wing-coverts nearly uniform cinnamon-brown (duller in female); sides and top of head and neck, with hind-neck, ash-gray, the latter tinged with brown; chin, throat, and chest grayish white, the latter sometimes tinged with fulvous; upper mandible black, lower bright yellow (in life); iris bright yellow; wing 2.60–2.80, tail 2.60–2.80, culmen .45–.50, tarsus .80, middle toe .55. *Hab.* Mountains of southern Lower California.................... 571. **J. bairdi** BELDING. **Baird's Junco.**

GENUS **AMPHISPIZA** COUES. (Page 385, pl. CIX., figs. 6, 7.)

Species.

*a*¹. A continuous white superciliary stripe. (Above plain grayish brown, the back very indistinctly streaked with darker in young only.)

Adult (sexes alike): Lores, chin, throat, and chest uniform black; a malar stripe (reaching not quite to bill), sides of chest, and belly, white; sides grayish, becoming browner on flanks. *Young:* No distinct black markings on head or neck; chin and throat white, often more or less clouded or flecked with grayish, the chest more distinctly marked with the same; wing-coverts and tertials light brown. Length 5.00–5.75, wing about 2.60–2.75, tail 2.65–2.90. *Nest* in bushes ("sage" bushes, and other desert shrubs), composed of fine thin shreds of bark, etc. *Eggs* .71 × .54, plain greenish or bluish white. *Hab.* Southwestern United States (from Texas to Lower California) and contiguous parts of Mexico, north, in the interior, to Nevada, Utah, and western Colorado. 573. **A. bilineata** (CASS.). **Black-throated Sparrow.**

*a*². A white supraloral spot, but no superciliary stripe.

*b*¹. No streaks on sides; wing with two white bands or else sides deep slate-gray.

*c*¹. Lesser wing-coverts grayish or blackish.

*d*¹. Rump cinnamon-rufous; lesser wing-coverts blackish. *Adult:* Upper part of throat black, the point of the chin white; fore-neck and lower part of throat uniform ash-gray; top of head grayish, streaked with black; a broad white malar stripe; lores and beneath eyes black; sides and under tail-coverts light ochraceous-cinnamon; belly white; back brownish, broadly streaked with black; wing about 2.80, tail 3.20–3.40. *Hab.* Southern Mexico (Vera Cruz, Puebla, etc.).

A. mystacalis (HARTL.). **Hartlaub's Sparrow.**[1]

*d*². Rump slate-gray; lesser wing-coverts slate-gray. *Adult:* Sides of chin and throat and spot on chest black, enclosing a white stripe; top of head, lores, cheeks, and ear-coverts dull brownish slate; sides and flanks slate-gray, middle of breast and belly white; under tail-coverts plumbeous, tipped with white; wing 2.75, tail 2.70, culmen .48, tarsus .80, middle toe .58. *Hab.* Mexico.

A. quinquestriata (SCL. & SALV.) **Five-striped Sparrow.**[2]

*c*². Lesser wing-coverts cinnamon-rufous.

Rump and sides brownish. *Adult:* Malar stripe, supraloral spot, and broad patch on chin and throat, white; sides of chin and throat, and very broad collar across chest (widest laterally), black; wing 2.50–2.70, tail 3.00–3.30, culmen .50, tarsus .85, middle toe .60. *Hab.* Southern Mexico (Puebla).

A. humeralis (CAB.). **Ferrari-Perez's Sparrow.**[3]

*b*². Sides streaked with grayish or dusky; wing without white bands. (*Adult:* Supraloral spot, orbital ring, broad malar stripe, chin, throat, and lower parts generally, white; more or less distinct stripe, or series of streaks, along each side of throat, and spot on middle of chest, dusky or grayish; sides and flanks pale brownish, or tinged with brownish, and streaked with darker. *Young:* Upper parts light grayish brown, streaked with dusky; chest distinctly streaked with dark grayish; wing-coverts tipped with dull buffy whitish, or pale buff, producing two tolerably distinct bands; otherwise, much like adult.)

*c*¹. Above dark hair-brown (grayer on head and neck), the back usually without distinct streaks; sides of throat marked with a broad, continuous stripe of blackish; sides and flanks light brown; length about 5.50–5.75. *Male:* Wing 2.51–2.80 (2.64), tail 2.60–2.95 (2.77). *Female:* Wing 2.40–2.55 (2.50), tail 2.55–2.90 (2.77). *Hab.* California................................ 574. **A. belli** (CASS.). **Bell's Sparrow.**

*c*². Above light grayish brown, tinged with ash-gray, the back usually very distinctly streaked with dusky; sides of throat marked with a series of narrow dusky grayish streaks, but no continuous stripe; sides and flanks very faintly tinged with light brown; length 6.00–7.00. *Male:* Wing 2.95–3.20 (3.09), tail 2.75–3.20 (2.96). *Female:* Wing 2.90–3.10 (2.97), tail 2.75–3.07 (2.92). *Nest* on ground, beneath

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[1] *Zonotrichia mystacalis* HARTL., Rev. Zool. Jan. 1852, 3.

[2] *Zonotrichia quinquestriata* SCL. & SALV., P. Z. S. 1868, 323. *Amphispiza quinquestriata* RIDGW., Ibis, Oct. 1883, 400.

[3] *Hæmophila humeralis* CAB., Mus. Hein. i. 1850, 132. *Amphispiza ferrariperezi* RIDGW., Auk, iii. July, 1886, 332.

"sage" bush, composed of fine thin shreds of "sage-brush" bark, dried grass-stems, etc. *Eggs* 3–4, .77 × .55, greenish white or dull grayish white, speckled, chiefly on larger end, with reddish brown, mixed with a few darker markings. *Hab.* Artemisia plains of western United States, north to southern Idaho, Montana, and plains of the Columbia, east to Colorado and New Mexico, south to northern Mexico and interior of southern California (San Bernardino County, etc.).

(66.) 574*a*. **A. belli nevadensis** Ridgw. **Sage Sparrow.**

Genus PEUCÆA Audubon. (Page 386, pl. CX., fig. 1.)

Species.

Common Characters.—*Adults:* Upper parts more or less streaked with rusty and grayish; top of head streaked with brown, or rusty, and grayish, or else plain rusty; no distinct light bands on wing; lower parts plain light dull grayish or dull buffy, the belly white or whitish. *Young:* Above more tawny or buffy, and more distinctly streaked, than in adult; lower parts whitish or yellowish buff, the chest, etc., streaked with dusky. *Nest* on or near ground. *Eggs* 3–5, plain white or bluish white.

*a*¹. Tarsus not more than .85.
  *b*¹. Lesser wing-coverts brown or rusty centrally, margined with paler.
    *c*¹. Edge of wing more or less distinctly tinged with yellow.
      *d*¹. Middle tail-feathers without indications of distinct bars; flanks without distinct streaks.
        *e*¹. Whole belly and lower part of breast dull white, the sides, flanks, and chest pale grayish buff (deepest on chest).
          *f*¹. Darker, the streaks on upper parts chestnut, the back always (?) streaked with black; length 5.60–6.25, wing 2.20–2.50 (2.35), tail 2.38–2.70 (2.57), culmen .50–.52 (.51), depth of bill at base .26–.28 (.27), tarsus .76–.80 (.79). *Eggs* .73 × .60, plain pure white. *Hab.* Florida and lower Georgia.

575. **P. æstivalis** Licht. **Pine-woods Sparrow.**

          *f*². Lighter, with streaks on upper parts bright rusty, the back often (usually?) without black streaks; length 5.30–6.25, wing 2.35–2.60 (2.47), tail 2.55–2.70 (2.61), culmen 52–.60 (.56), depth of bill .27–.29 (.28), tarsus .75–.83 (.78). *Hab.* Southern Atlantic and Gulf States and lower Mississippi Valley, north to North Carolina, eastern Tennessee, Kentucky, southern Illinois and

Indiana (to at least 40°), west to middle northern Texas............ 575*a*. **P. æstivalis bachmani** (Aud.). **Bachman's Sparrow.**

*e*². Entire lower parts pale dull grayish buff, paler on throat, the middle of the belly sometimes nearly white.

*f*¹. Larger and lighter colored. *Adult:* Above dull light grayish brown, more or less mixed with rusty, the back, and sometimes top of head, streaked with black. *Young:* Above dull light grayish buff, everywhere broadly streaked with dusky; lower parts pale dingy buff, the throat, chest, and sides of breast streaked with dusky; greater wing-coverts broadly edged with light tawny. Length about 6.00–6.50, wing 2.45[1]–2.75 (2.55), tail 2.50[1]–2.90 (2.70), culmen .51–.55 (.53), depth of bill at base .25–.28 (.26), tarsus .60–.65 (.62). *Eggs* .72 × .58, plain pure white. *Hab.* Northern, central, and western Mexico, south to Guanajuato and Colima, north to southern Arizona and Rio Grande Valley. 576. + 577. **P. mexicana** (Lawr.). **Mexican Sparrow.**[2]

*f*². Smaller and darker colored; upper parts heavily streaked with blackish on a grayish and rusty ground; wing 2.50–2.55, tail 2.60–2.65. *Hab.* Southeastern Mexico (Vera Cruz, etc.). **P. botterii** Scl. **Botteri's Sparrow.**[3]

*d*². Middle tail-feathers with decided indications of transverse bars, projected from a dark brown median stripe; flanks broadly streaked with dark brownish.

Adult: Above grayish, spotted with clear umber-brown and dusky, the upper tail-coverts with subterminal transverse, more or less crescentic, spots of dusky; beneath dull grayish white, faintly tinged with brownish on chest and sides; length 6.00–6.75, wing 2.50–2.70, tail 2.65–2.90, culmen .50–.53, tarsus .77–.82. *Eggs* .73 × .56, plain pure white. *Hab.* Southwestern border of United States (Texas to Arizona) and northern Mexico; north, in summer, to middle Kansas. 578. **P. cassini** (Woodh.). **Cassin's Sparrow.**

*c*². Edge of wing dull white or grayish. (*Adult:* Crown chiefly ferruginous, often quite uniform; upper parts grayish or grayish brown, the back and scapulars broadly streaked with rusty or brown;

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[1] The minimum measurements of wing and tail, as given above, are very unsatisfactory, the specimens from which they were taken having the quills and tail-feathers much worn. The true average, therefore, should be considerably higher—at least 2.60 for the wing and 2.75 for the tail.

[2] Includes also *P. arizonæ* Ridgw., which proves to be not separable.

[3] *Zonotrichia botterii* Scl., P. Z. S. 1857, 214. *Peucæa botterii* Scl., Cat. Am. B. 1862, 116.

lower parts light grayish brown, or dull grayish buff, paler on throat and belly; a distinct broad black streak on each side of throat, bordered above by a maxillary stripe the same color as throat; a rusty postocular streak. *Young:* Upper parts, including top of head, dull brownish, streaked with darker; lower parts dingy pale grayish buff, the chest and sides streaked with dusky; otherwise, much like adult.)

*d*¹. Feathers of back largely rusty or chestnut centrally; prevailing color of upper parts dull brownish.

*e*¹. Smaller: Length about 5.50–5.75, wing 2.20–2.40 (2.32), tail 2.50–2.70 (2.58), culmen .48–.50 (.49), depth of bill at base .20–.22 (.21), tarsus .75–.80 (.79). *Eggs* .78 × .60, plain bluish white. *Hab.* California.

580. **P. ruficeps** (Cass.). **Rufous-crowned Sparrow.**

*e*². Larger: Length 6.10–6.60, wing 2.50–2.80 (2.60), tail 2.75–3.00 (2.89), culmen .50.–58 (.52), depth of bill at base .25–.27 (.26), tarsus .78–.90 (.81). (Colors rather less bright than in *P. ruficeps*, with the rusty less bright and the lower parts rather less fulvous, but the difference very slight and not entirely constant.) *Nest* on ground, in or by tufts of grass. *Eggs* 3–4, .83 × .60, plain white. *Hab.* Table-lands of Mexico, from Oaxaca north to Lower California, southern Arizona and New Mexico, and western Texas.

580*a*. **P. ruficeps boucardi** (Scl.). **Boucard's Sparrow.**

*d*². Feathers of back dull brownish (not rusty) centrally, with blackish shaft-streaks; prevailing color of upper parts ashy, especially on back and scapulars; measurements essentially as in *P. boucardi.* *Hab.* Eastern Mexico (highlands of Vera Cruz, etc.), north to central Texas.

580*b*. **P. ruficeps eremœca** Brown. **Rock Sparrow.**

*b*². Lesser wing-coverts uniform bright cinnamon-rufous (except in first plumage).

Adult: Top of head streaked broadly with dark rufous or rusty (sometimes nearly uniform rufous) and narrowly with grayish, the latter also forming a more or less distinct median line; a broad superciliary stripe and sides of head generally light grayish; upper parts brownish gray or light grayish brown, the back and scapulars streaked with blackish; lower parts grayish white; a blackish streak along each side of throat, another from corner of mouth, and a rusty postocular streak. *Young:* Upper parts, including whole top of head, light brown, broadly streaked with blackish; lesser wing-coverts dusky centrally, margined with pale brownish buff; lower parts whitish, the chest and sides broadly streaked with dusky. Length 5.70–5.90, wing 2.40–2.55, tail 2.80–3.00, tarsus about .75. *Eggs* .75 × .54, plain bluish white. *Hab.* Southern Arizona................ 579. **P. carpalis** Coues. **Rufous-winged Sparrow.**

*a*². Tarsus .90, or more.

Adult: Above brownish gray, the back and scapulars distinctly streaked with blackish; top of head umber-brown, streaked with black, and divided medially by a stripe of ash-gray; eyelids conspicuously whitish, but this surrounded by dusky; malar stripe, chin, throat, and belly white; chest pale brownish gray, changing to a more buffy tint along sides; a blackish streak along each side of throat; wing 2.70–2.75, tail 3.00–3.20, exposed culmen .47–.50, depth of bill at base .27–.30, tarsus .90–.95. *Hab.* Southern Mexico (Oaxaca).

P. notosticta Scl. & Salv. **Oaxaca Sparrow.**[1]

Genus MELOSPIZA Baird. (Page 386, pl. CX., figs. 2, 4.)

Species.

Common Characters.—Above grayish, brownish, olive, or rusty, more or less distinctly streaked, especially on the back, with darker; top of head brownish, streaked with darker, and divided medially by a more or less distinct grayish stripe, or else chestnut, becoming black on forehead; wings and tail brownish (usually more or less rusty), the former without distinct light bands; ear-coverts and superciliary stripe grayish, separated by a brownish or dusky postocular streak; a whitish, light grayish, or buffy malar stripe, bordered below by a more or less distinct brown or dusky streak along side of throat; lower parts mainly whitish, the chest and sides usually streaked with rusty, brown, or dusky. *Young* similar to adults, but markings less sharply defined and colors more blended. *Nest* in low bushes or on ground. *Eggs* light greenish or dull bluish white, more or less spotted with brown.

*a*¹. First quill not longer than seventh; malar stripe white or light grayish; chest not distinctly buffy.

*b*¹. *Adult* with chest white, very distinctly streaked or spotted with brown, rusty, or blackish; top of head brown, divided by a more or less distinct median stripe of grayish, and without black on forehead or occiput; postocular streak brown like crown. *Eggs* dull whitish, pale bluish green, dilute brownish, etc., blotched, spotted, speckled, or sprinkled with brown.

*c*¹. Wing less than 3.10, culmen less than .64.

*d*¹. Markings of plumage very distinct, more or less sharply contrasted with the ground-color, the latter grayish, olive, or grayish brown on upper parts.

*e*¹. Streaks on back more or less decidedly blackish, those on chest brownish (not rufous or decidedly rusty) or blackish.

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[1] *Peucæa notosticta* Scl. & Salv., P. Z. S. 1868, 322.

*f*¹. Lighter colored, with ground-color of upper parts more or less distinctly grayish; the streaks on chest brownish (rarely blackish).

*g*¹. With shorter wing and tail, stouter bill, general tone of plumage more brown, and streaks both above and below broader; length 6.00–6.75, wing 2.45–2.80 (2.60), tail 2.58–3.02 (2.75), culmen .50–.54 (.52), depth of bill .27–.30 (.29), tarsus .81–.90 (.85). *Eggs* .79 × .59. *Hab.* Eastern United States and British Provinces, west to base of Rocky Mountains; breeding chiefly north of 40°, except east of Alleghanies.

581. **M. fasciata** (Gmel.). **Song Sparrow.**

*g*². With longer wing and tail, smaller and more slender bill, general tone of plumage more gray, and streaks, both above and below, narrower; length 6.25–7.00, wing 2.52–3.05 (2.74), tail 2.58–3.05 (2.91), culmen .49–.51 (.50), depth of bill .26–.28 (.27), tarsus .86–.93 (.90). *Eggs* .79 × 58. *Hab.* Rocky Mountain district, west to Nevada, eastern Oregon, and eastern Washington Territory.

581*b*. **M. fasciata montana** (Hensh.).
(67.) **Mountain Song Sparrow.**

*f*². Darker, with ground-color of upper parts decidedly brown or olive, the dark streaks, both above and below, heavier and blacker.

*g*¹. Thighs rather light grayish brown, or hair-brown; spots on chest smaller and narrower, always distinct from one another.

*h*¹. Larger, with stouter bill; length 6.25–6.50, wing 2.45–2.80 (2.62), tail 2.68–3.14 (2.88), culmen .50–.59 (.53), depth of bill .26–.31 (.28), tarsus .84–.94 (.90). *Eggs* .86 × .64. *Hab.* Interior districts of California, including eastern side of Sierra Nevada.

581*c*. **M. fasciata heermanni** (Baird).
Heermann's Song Sparrow.

*h*². Smaller, with slenderer bill; length 4.70–5.75, wing 2.15–2.50 (2.35), tail 2.00–2.68 (2.44), culmen .50–.55 (.52), depth of bill .24–.28 (.26), tarsus .81–.89 (.86). *Eggs* .74 × .58. *Hab.* Coast of California. 581*d*. **M. fasciata samuelis** (Baird). **Samuels's Song Sparrow.**

*g*². Thighs deep tawny- or umber-brown; spots on chest larger and broader, often united into a large patch.

Darker and richer colored throughout than in either *M. heermanni* or *M. samuelis*, the general size much as in former, but bill much more slender and tarsi longer; wing 2.50–2.80 (2.62), tail 2.50–2.70 (2.60), culmen .52–.55 (.54), depth of bill .22–.27 (.25), tarsus .90–.95 (.93). *Hab.* Southern Mexico (Puebla, Valley of Mexico, etc.).

M. fasciata mexicana Ridgw. **Mexican Song Sparrow.**[1]

e^2. Streaks on back rusty, usually without blackish shaft-line; streaks on chest clear rusty or rufous; length 6.10–6.50, wing 2.40–2.73 (2.59), tail 2.65–3.05 (2.83), culmen .49–.52 (.51), depth of bill .27–.29 (.28), tarsus .81–.90 (.86). *Hab.* Arizona (in lower districts).

(68.) 581*a*. **M. fasciata fallax** (Baird). **Desert Song Sparrow.**

d^2. Markings of plumage more or less obscured by the prevalent dull rusty or sooty coloring.

e^1. Smaller, with general tone of coloration more rusty; length about 6.00–7.00, wing 2.43–2.83 (2.63), tail 2.40–2.98 (2.73), culmen .53–.58 (.55), depth of bill .26–.30 (.28), tarsus .87–.92 (.90). *Eggs* .82 × .59. *Hab.* Pacific coast district, breeding from western Oregon (and northern California ?) north to British Columbia (Vancouver Island, etc.).

581*e*. **M. fasciata guttata** (Nutt.). **Rusty Song Sparrow.**

e^2. Larger, with general tone of coloration more sooty; length about 6.50–7.50, wing 2.62–3.05 (2.87), tail 2.65–3.18 (2.89), culmen .56–.61 (.58), depth of bill .25–.28 (.27), tarsus .95–1.05 (1.00). *Hab.* Coast of southern Alaska (and northern British Columbia ?).

581*f*. **M. fasciata rufina** (Brandt). **Sooty Song Sparrow.**

c^2. Wing more than 3.10, culmen .64, or more.

Plumage much as in *M. rufina*, but decidedly grayer; length about 7.50–8.75, wing 3.20–3.50 (3.36), tail 3.08–3.60 (3.44), culmen .64–.72 (.69), depth of bill .30–.32 (.31), tarsus 1.05–1.15 (1.11). *Eggs* .89 × .65. *Hab.* Aleutian Islands, and east to Fort Kenai, Alaska.

(69.) 582. **M. cinerea** (Gmel.). **Aleutian Song Sparrow.**

b^2. *Adult* with chest grayish (tinged with brown in winter), very indistinctly or not at all streaked or otherwise marked; top of head plain chestnut, becoming black on forehead and sides of occiput, or else very broadly streaked with black and divided by a more or less distinct median line of light ashy or dull buffy; postocular streak dusky.

Adult: Sides of head and neck, together with chest, ashy, tinged with

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[1] *Melospiza melodia,* var. *mexicana* Ridgw., in Hist. N. A. B. ii. 1874, 18.

brown in winter and more or less stained with yellowish in immature birds. *Young:* Above heavily streaked with blackish, the anterior and lateral lower parts also distinctly streaked. Length 5.25–6.00, wing about 2.30–2.50, tail 2.40–2.70. *Eggs* .76 × .56, pale bluish green or greenish white, coarsely spotted or blotched with brown (rarely speckled). *Hab.* Eastern North America, breeding from northern United States north to Newfoundland, Labrador, and Fort Simpson; west to edge of Great Plains, casually to Utah.
584. **M. georgiana** (LATH.). **Swamp Sparrow.**

a^2. First quill longer than sixth; malar stripe and broad band across chest buff, the latter narrowly streaked with black.

Adult: Top of head hazel-brown sharply streaked with black and divided by a median grayish line; back olive-grayish or brown, sharply streaked with black. *Young:* Not essentially different from adult, but colors more suffused and with streaks less sharply defined. Length 5.25–6.00, wing 2.30–2.65, tail 2.30–3.00. *Eggs* .77 × .57, dull whitish, greenish white, or (usually) brownish white or pale brownish, marked like those of *M. georgiana*. *Hab.* Whole of North America, breeding from northern border of United States northward, and south along
(70.) higher mountain ranges... 583. **M. lincolni** (AUD.). **Lincoln's Sparrow.**

GENUS **PASSERELLA** SWAINSON. (Page 384, pl. CX., figs. 3, 5.)

Species.

COMMON CHARACTERS.—Above brownish gray, brownish, or rusty, the upper tail-coverts, tail, and wings usually much more rufescent than other portions; the back (sometimes top of head also) sometimes streaked with rusty; lower parts white, more or less thickly marked with triangular spots of brown, rusty, or dusky, especially on chest (where these spots are sometimes united into a more or less conspicuous patch, as also on sides of throat), the sides and flanks striped or broadly streaked with the same color. *Young* not materially different from adults. *Nest* on ground, or near ground in bushes. *Eggs* 3–5, pale bluish green, dull brownish white, or light brownish, speckled, spotted, or blotched with brown (sometimes nearly uniform chocolate-brown).

a^1. Wing longer than tail; spots on chest larger, more blended.

b^1. Upper parts mixed deep rusty and brownish gray, in variable proportion; if grayish predominating, the back (sometimes top of head also) streaked with rusty; wing-coverts usually narrowly tipped with whitish, producing two more or less distinct bars; markings on lower parts chiefly (or entirely) deep rusty; length 6.20–7.50, wing 3.30–3.70 (3.50), tail 2.80–3.15 (3.02), exposed culmen .43–.47 (.45), depth of bill .30–.33 (.32), tarsus .97–1.04 (1.01), hind-claw .38–.43 (.39). *Eggs* .91 × .63, the deep brownish style very frequent. *Hab.* Northern North America, breeding from Gulf of St. Lawrence and Labrador to Alaska (everywhere north of the peninsula); in winter, over whole of eastern United States to Gulf coast.............................. 585. **P. iliaca** (Merr.). **Fox Sparrow.**

*b*². Upper parts plain grayish brown or brownish gray, with wings, upper tail-coverts, and tail rusty brownish, or else continuously deep vandyke-brown; wing-coverts without lighter tips, and back without trace of streaks;[1] markings on lower parts vandyke-brown; length 7.00–7.50, wing 3.00–3.50 (3.24), tail 2.85–3.20 (3.03), exposed culmen .43–.50 (.46), depth of bill .29–.32 (.30), tarsus .99–1.02 (1.00), hind-claw .42–.50 (.46). *Eggs* .90 × .66, the brownish style comparatively rare (?). *Hab.* Pacific coast, breeding from southern Alaska (British Columbia ?) to Unalashka; south, in winter, to southern California.

585*a*. **P. iliaca unalaschcensis** (Gmel.). **Townsend's Sparrow.**

*a*². Wing shorter than tail; spots on chest, etc., smaller, more scattered. (Upper parts plain brownish gray, becoming rusty brownish on wings, upper tail-coverts, and tail.)

*b*¹. Larger, with longer tail and larger and much thicker bill; length 7.00–7.75, wing 3.10–3.45 (3.27), tail 3.30–3.80 (3.50), exposed culmen .43–.55 (.48), depth of bill .38–.45 (.40), tarsus .90–1.00 (.96), hind-claw .40–.52 (.46). *Eggs* .86 × .64, colored like those of *P. unalaschcensis. Hab.* Mountains of California, including eastern slope of Sierra Nevada.

585*b*. **P. iliaca megarhyncha** (Baird). **Thick-billed Sparrow.**

*b*². Smaller, with smaller and slenderer bill; length 6.80–7.65, wing 3.05–3.35 (3.20), tail 3.20–3.50 (3.34), exposed culmen .40–.49 (.43), depth of bill .29–.32 (.31), tarsus .90–.96 (.93), hind-claw .40–.50 (.45). *Eggs* .85 × .64, colored like those of *P. unalaschcensis. Hab.* Rocky Mountains, west across Great Basin (occasional in California during migrations); east, in winter, to Great Plains (Kansas, etc.).

585*c*. **P. iliaca schistacea** (Baird). **Slate-colored Sparrow.**

(71.) Genus ARREMONOPS Ridgway.[2] (Page 385, pl. CX., fig. 6.)

Species.

Adult: Above plain olive-green, the top of the head with two dull chestnut-brown (lateral) and one grayish or olive-greenish (median) stripes; sides of head grayish, with a brown streak behind eye; lower parts dull white, strongly tinged anteriorly and laterally with pale buffy grayish; edge of wing bright yellow.

*a*¹. Upper mandible reddish brown; legs and feet pale brown; stripes on crown entirely chestnut-brown, not sharply defined.

*b*¹. Bill slender, its depth at base not more than .25; the length of upper mandible from nostril to tip .35–.38; flanks pale grayish buff, or light grayish fulvous; under tail-coverts pale buff; length 6.00–6.75, wing 2.60–2.75, tail 2.50–2.70, tarsus .90–.95. *Nest* in low bushes, composed of dried twigs, straws, etc., the top partially or completely domed. *Eggs* 2–4, .89 × .64, plain pure white. *Hab.* Lower Rio Grande Valley in Texas, and southward................ 586. **A. rufivirgata** Lawr. **Texas Sparrow.**

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[1] Except in specimens approaching *P. iliaca;* such are sometimes almost undistinguishable as far as color is concerned from *P. schistacea* except by the brown or rusty streaks on back; the proportions, however, may apparently always be relied upon to distinguish them.

[2] See Appendix, page 605.

b^2. Bill stouter, its depth at base .28–.33, length of upper mandible from nostril to tip .35–.40; flanks deep drab or raw umber-brown; lower tail-coverts deep fulvous-buff; wing 2.55–2.75, tail 2.30–2.70, tarsus .85–.90. *Hab.* Southern Mexico.

A. rufivirgata crassirostris Baird. **Cordova Sparrow.**[1]

a^2. Upper mandible dark brown or brownish black; legs and feet deep brown; crown-stripes sharply defined, black anteriorly, mixed chestnut and black posteriorly, the broad median stripe clear ash-gray throughout.

Bill slender, and posterior lower parts pale, as in *E. rufivirgata;* depth of bill at base .26–.28, length from nostril .35–.40, wing 2.50–2.68, tail 2.60–2.80, tarsus .85–.95. *Hab.* Yucatan (Merida).

A. rufivirgata verticalis Ridgw. **Striped-crowned Sparrow.**[2]

Genus **PIPILO** Vieillot. (Page 384, pl. CXI., figs. 1, 3.)

Species.

(*Nest* on ground, in bushy places, in bushes, brambles, vines, or small trees. *Eggs* 3–5, more or less spotted.)

a^1. Throat and chest black or brownish, in abrupt contrast with white of breast and belly; sides and flanks rufous or rusty. *Eggs* white, pinkish white, or dilute cinnamon or vinaceous, thickly speckled or sprinkled with reddish brown.

b^1. Wings and tail black or brownish, like chest, etc.

c^1. Wing-coverts and scapulars without white markings. (*Adult male:* Head, neck, chest, and upper parts uniform black; basal portion of quills, and edge of outer web near middle, white, the two sometimes confluent; a large white patch at tip of inner webs of three or four outer tail-feathers. *Adult female:* Similar to male, but black everywhere replaced by umber-brown. *Young:* Wings and tail much as in adult; head, neck, back, and chest dull fulvous, streaked with blackish.)

d^1. Larger, with larger white markings on quills and tail-feathers; iris of adult male bright carmine-red; length 7.50–8.75, wing 3.30–3.75 (3.50), tail 3.55–4.10 (3.84), white space on outer tail-feather 1.30–1.60 long. *Eggs* .94 × .71. *Hab.* Eastern United

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[1] *Embernagra rufivirgata, β. crassirostris* Ridgw., Proc. U. S. Nat. Mus. i. Dec. 17, 1878, 248, 249 (*ex* "*E. rufivirgata* var. *crassinostris* Baird, MS.").

[2] *Embernagra rufivirgata, γ. verticalis* Ridgw., Proc. U. S. Nat. Mus. i. Dec. 17, 1878, 248, 249.

States, west to Minnesota, eastern Dakota, Kansas, and Texas, south to Gulf coast.

587. **P. erythrophthalmus** (Linn.). **Towhee.**

*d*². Smaller, with smaller white markings on quills and tail-feathers; iris of adult male usually yellowish or whitish; length 7.00–8.25, wing 2.95–3.20 (3.10), tail 3.55–3.90 (3.71); white space on outer tail-feather only .66–.75 long. *Eggs* 1.01 × .69 (?). *Hab.* Florida.............. 587*a*. **P. erythrophthalmus alleni** Coues. **White-eyed Towhee.**

*c*². Wing-coverts tipped with white, and scapulars more or less streaked with the same.

*d*¹. Back more or less streaked with white (these streaks sometimes concealed or even obliterated in middle of back, but always distinct along sides of back, next to scapulars).

*e*¹. Streaks on back very conspicuous, and other white markings greatly developed, the white on wing-coverts forming two broad, continuous bars across wing, the white edgings to quills and tertials always distinct, and white terminal space on outer tail-feather more than 1.00 long; *adult females* with general color of head, neck, chest, and upper parts grayish brown or olive-brown.

*f*¹. *Adult male* with rump, upper tail-coverts, remiges, and edges of tail-feathers olive brownish (sometimes inclining to smoky grayish), the back and scapulars mixed with the same color.

Wing 3.25–3.75, tail 3.95–4.20, exposed culmen .52–.55, tarsus 1.10–1.12, middle toe .75–.80; white space on outer tail-feather 1.30–1.50, involving both webs. *Hab.* Southern and central Mexico and highlands of Guatemala.

P. maculatus Swains. **Mexican Towhee.**[1]

*f*². *Adult males* with rump, upper tail-coverts, etc., black, or but slightly intermixed with grayish (rump sometimes uniform olive-grayish).

*g*¹. Lighter colored, with white markings more extensive, and rufous of sides, etc., paler, more ochraceous; white edgings to primaries sometimes developed into a more or less conspicuous patch at base; white on outer tail-feather occupying more than the exposed half (1.30–1.75 long). *Adult female* with head, neck, chest, rump, etc., broccoli-brown. *Young:* Similar to corresponding stage of *P. erythrophthalmus*, but less tawny, and with wing-coverts much more distinctly tipped with white or buffy. Length 8.00–8.75, wing 3.30–3.50 (3.43), tail 3.90–4.25 (4.07), exposed culmen .49–.54 (.52), tarsus 1.03–1.10 (1.08). *Eggs* .94 × .70. *Hab.* Great Plains, north to the Saskatchewan, south (in winter only?) to Texas, east to Indian Territory, Kansas, Nebraska, etc., west to base of Rocky Mountains..... 588. **P. maculatus arcticus** Swains. **Arctic Towhee.**

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[1] *Pipilo maculatus* Swains., Phil. Mag. n. s. i. 1827, 434.

*g*². Darker, with white markings more restricted, and rufous of sides, etc., deeper; white edgings of primaries never developed into a basal patch; white space on outer tail-feather occupying not more (usually less) than terminal exposed half (1.10–1.35 long). *Adult female* with head, neck, chest, rump, etc., dusky grayish brown. *Young* hardly distinguishable from corresponding stage of *P. arcticus.* Length 8.50–8.90, wing 3.40–3.60 (3.52), tail 4.00–4.40 (4.25), exposed culmen .50–.59 (.53), tarsus 1.03–1.12 (1.09). *Eggs* .95 × .68. *Hab.* Rocky Mountains and west to interior of California, north to eastern Washington Territory, etc., south to northern Mexico and Lower California.. 588*a*. **P. maculatus megalonyx** (Baird). **Spurred Towhee.**

*e*². White streaks on back obsolete or concealed, except on outermost interscapulars, and other white markings much restricted; white at tips of wing-coverts reduced to small roundish spots, that on edges of quills and tertials very inconspicuous—sometimes quite obsolete—that on outer tail-feathers less than 1.00 in length; *adult females* with general color of head, neck, chest, and upper parts dark sooty brown or dusky sepia. (Rufous of sides, etc., also decidedly deeper.)

*f*¹. Larger, the wing averaging more than 3.30, tail averaging more than 3.80; length 8.00–8.60, wing 3.25–3.45 (3.35), tail 3.60–4.10 (3.90), exposed culmen .52–.58 (.54), tarsus 1.07–1.13 (1.10). *Eggs* .94 × .70. *Hab.* Pacific coast, from California to British Columbia.... 588*b*. **P. maculatus oregonus** (Bell). **Oregon Towhee.**

*f*². Smaller, the wing averaging less than 3.10, tail averaging less than 3.60; length about 6.50–7.50, wing 2.90–3.25 (3.06), tail 3.25–3.80 (3.56), tarsus 1.00–1.10 (1.06). *Hab.* Guadalupe Island, Lower California.
589. **P. consobrinus** Ridgw. **Guadalupe Towhee.**

*d*². Back without white streaks. (*Adult males* with general color of upper parts dusky grayish brown, the outermost scapulars with outer webs partly white, and both rows of wing-coverts tipped with small white spots; only one or two outer tail-feathers with white terminal spots, these very small—less than .90 long.)

*e*¹. Larger: Wing 3.30, tail 3.70, culmen .60, tarsus 1.15. *Adult male:* Head, neck, and chest brownish black, becoming dark grayish brown, indistinctly streaked with darker, on top of head and hind-neck; back and scapulars umber-brown, tinged with rusty, broadly, though rather indistinctly, streaked with dusky. *Hab.* Southern Mexico (Puebla). **P. submaculatus** Ridgw. **Submaculated Towhee.**[1]

*e*². Smaller: Wing 2.60–2.80 (2.74), tail 3.00–3.15 (3.07), exposed culmen .49–.53 (.50), tarsus .94–1.01 (.98). *Adult male:* Head, neck, chest, and upper parts dark sooty grayish brown. *Adult female:* Similar to the male, but browner. *Hab.* Socorro Island, western Mexico.
P. carmani Lawr. **Socorro Towhee.**[2]

*b*². Wings and tail olive-green. (*Adult males* with head, neck, and chest black, breast and belly white, and sides rufous, as in *P. erythrophthalmus* and allies; *females* unknown.)

*c*¹. Tail 4.50, or more; top of head without rufous spot, and throat without white patch.

*d*¹. Back and scapulars streaked with blackish and pale yellow, the outer webs of exterior scapulars almost wholly of this color; middle and greater wing-coverts tipped with pale yellow, forming two distinct bands across wing; three outer tail-feathers with terminal portion of inner web abruptly pale yellow or yellowish white, the spot on outermost feather about 1.10 long; length about 8.75–9.00, wing 3.70–3.80, tail 4.60, culmen .70–.75, tarsus 1.15–1.25. *Hab.* Valley of Mexico.
P. macronyx Swains. **Swainson's Towhee.**[3]

*d*². Back and scapulars plain olive-green; wing-coverts without distinct yellowish tips, and whitish or light yellowish spots at tips of outer tail-feathers not sharply defined; length about 8.00–8.50, tail 4.50, culmen .68, tarsus 1.15–1.25. *Hab.* Southern Mexico (Oaxaca).
P. chlorosoma Baird. **Green-backed Towhee.**[4]

*c*². Tail not more than 4.00; top of head with a rufous spot, and throat with a white patch.

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[1] *Pipilo submaculatus* Ridgw., Auk, iii. July, 1886, 332.
[2] *Pipilo carmani* Lawr., Ann. Lyc. N. x. 1871, 7.
[3] *Pipilo macronyx* Swains., Philos. Mag. n. s. i. 1827, 434.
[4] *Pipilo chlorosoma* Baird, Hist. N. Am. B. ii. 1874, 105.

Adult male: Similar to same sex of *P. macronyx*, but with shorter tail, rufous of sides, etc., paler and more ochraceous, and differing in coloration of the head, as above; wing 3.60, tail 3.90, culmen .62, tarsus 1.15. *Hab.* Southern Mexico (Puebla).

P. complexus Ridgw. **Complex Towhee.**[1]

*a*². Throat and chest neither black nor brown, abruptly contrasted with color of breast, which is never white; sides and flanks not rufous or rusty.

*b*¹. Wings and tail olive-green; edge of wing, under wing-coverts, and axillars bright yellow; chest and sides plain ash-gray. (*Oreospiza* Ridgw.) (72.)

Adult (*sexes alike*): Crown and occiput uniform rufous; forehead and sides of head deep ash-gray, the former with a broad white streak along each side; a white malar streak, bordered below by a dusky line along each side of throat, passing posteriorly into ash of chest; chin and throat, abruptly, white. *Young:* Above olive-grayish, streaked with dusky; lower parts dingy whitish, the chest, etc. streaked with dusky. Length 7.00–7.85, wing 3.00–3.30, tail 3.50–3.90. *Eggs* .84 × .65, whitish, speckled or sprinkled with reddish brown (averaging rather paler, with finer speckling, than egg of *P. erythrophthalmus*, etc.). *Hab.* Rocky Mountain district, north to eastern Oregon, Idaho, Montana, etc., west to Sierra Nevada, south into Mexico..... 590. **P. chlorurus** (Towns.). **Green-tailed Towhee.**

*b*². Wings and tail grayish brown; edge of wing white or pale cinnamon-buffy, under wing-coverts and axillars pale cinnamon or brownish gray. *Eggs* white, greenish white, bluish white, or pale greenish blue, speckled or spotted, chiefly round larger end, with dark brown and black, often with short "pen-lines" of the latter color.

*c*¹. Lores and chin whitish or buffy; lower throat or chest, or both, flecked with dusky.

*d*¹. Throat white, crossed, at about the middle, by a band of ochraceous or buff, this occupying the posterior half, or more, of malar region.

Above uniform grayish brown, the middle wing-coverts tipped, more or less distinctly, with white; chest, breast, and belly white, the first flecked with grayish, and along posterior border of white throat-patch spotted with dusky, sometimes forming a nearly continuous dusky line; sides of breast and sides gray or brownish gray, flanks and under tail-coverts ochraceous; length about 7.00, wing 3.25–3.30, tail 3.60–3.70. *Hab.* Southern Mexico (Oaxaca, Puebla, etc.).

P. rutilus Licht. **Sclater's Towhee.**[2]

*d*². Throat (also chin and malar region) buffy, ochraceous, or tawny.

*e*¹. Paler, with throat, etc., buffy, sides ashy, middle of belly distinctly white, under tail-coverts ochraceous, and upper parts brownish gray.

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[1] *Pipilo complexus* Ridgw., Auk, iii. July, 1886, 332.

[2] *Pipilo rutilus* Licht., Preis-Verz. 1830, No. 71. (*P. albicollis* Scl., P. Z. S. 1858, 304.)

f[1]. Top of head only slightly, if at all, browner or more rufescent than back; wing 3.40–4.00 (3.59), tail 3.60–4.25 (3.88), culmen .60–.65 (.63), tarsus .95–1.05 (.99). *Hab.* Mexico, north nearly to United States boundary; southern New Mexico?

P. fuscus SWAINS. **Brown Towhee.**[1]

f[2]. Top of head conspicuously rufescent.

g[1]. Larger, with less abrupt contrast between grayish (or dull whitish) of chest and buffy of throat; chest and sides usually less distinctly or less deeply gray; hinder portion of belly and flanks ochraceous, like under tail-coverts. *Young:* Above dull grayish brown, very indistinctly streaked with darker, the middle and greater wing-coverts edged and tipped with pale fulvous; lower parts dull white, changing to light fulvous on under tail-coverts, etc., the whole chest, breast, sides, sides of throat, etc., streaked with dusky. Length 8.10–8.80, wing 3.50–3.90 (3.73), tail 4.20–4.50 (4.34), exposed culmen .55–.63 (.60), tarsus 1.00–1.09 (1.03). *Eggs* .97 × .68, white, greenish white, or dull bluish white, speckled or spotted round larger end with black and rich madder-brown. *Hab.* New Mexico and Arizona......... 591. **P. fuscus mesoleucus** (BAIRD).

Canon Towhee.

g[2]. Smaller, with more abrupt contrast between grayish of chest and buffy of throat (the latter often much palest posteriorly), chest and sides more distinctly or deeply gray; hinder portion of belly white, of flanks grayish; length about 7.90–8.25, wing 3.40–3.70 (3.52), tail 3.85–4.25 (4.08), exposed culmen .53–.59 (.56), tarsus .93–1.06 (1.01). *Eggs* .91 × .65, greenish white or very pale greenish blue, speckled on or round larger end with black and dark brown, sometimes mixed with a few "pen-lines" of black. *Hab.* Lower California.

591*a*. **P. fuscus albigula** (BAIRD).

Saint Lucas Towhee.

e[2]. Darker, with throat, etc., cinnamon-ochraceous or tawny, sides grayish brown, middle of belly dull whitish or pale dull buffy, under tail-coverts deep tawny, and upper parts deeper brownish gray, or grayish brown.

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[1] *Pipilo fuscus* SWAINS., Philos. Mag. n. s. i. 1827, 434.

Light or tawny cinnamon-ochraceous of throat usually spotted or flecked with dusky; top of head browner than back, but not rufescent. *Young:* Above similar to adult, but browner, the middle and greater wing-coverts edged and tipped with isabella-color; beneath dull light buffy, changing to dull tawny buff posteriorly and on throat, and to dull grayish brown along sides, the entire fore-neck, chest, breast, etc., streaked with grayish dusky. Length 8.50–9.00, wing 3.70–4.00 (3.87), tail 4.40–4.75 (4.53), exposed culmen .55–.62 (.57), tarsus 1.10–1.16 (1.13). *Eggs* .99 × .61, colored like those of *P. albigula.* *Hab.* California.

(73.) 591*b*. **P. fuscus crissalis** (VIG.). **Californian Towhee.**

*c*². Lores and chin dusky; lower throat and chest plain light buffy cinnamon, or fawn-color.

Above plain grayish brown, becoming more decidedly brown on top of head; quills edged with grayish; lower parts nearly uniform light fawn-color, paler on belly and changing to cinnamon-tawny on under tail-coverts; length 8.50–9.00, wing 3.40–3.90, tail 4.75–5.00. *Eggs* .99 × .70, pale greenish blue or bluish white, speckled and scratched on or round larger end with dark brown, sometimes mixed with madder-brown. *Hab.* New Mexico and Arizona, north into southern Utah and Colorado........................ 592. **P. aberti** BAIRD. **Abert's Towhee.**

GENUS **CARDINALIS** BONAPARTE. (Page 382, pl. CXII., fig. 1.)

Species.

COMMON CHARACTERS.—*Adult males* bright vermilion-red, darker on upper parts; feathers round base of bill black (restricted to chin in *C. phœniceus*). *Adult females* brownish above, pale tawny or buffy beneath, the crest, wings, and tail dull reddish. *Young* much like adult female, but colors duller, the bill blackish. *Nest* a rather frail structure of fine rootlets, strips of grape-vine bark, etc., in bushes, brambles, grape-vines, or low trees. *Eggs* 2–4, white, greenish white, or brownish white, spotted or speckled with various shades of brown and lilac-gray.

*a*¹. Culmen nearly straight to near tip, where gently curved; upper mandible about as deep as the lower, its edge slightly lobed anterior to the slight angle, without grooves; color of bill bright vermilion-red in life; feathers all round base of bill black, the throat also black. *Adult females* with under wing-coverts pinkish red.

*b*¹. Feathers of crest soft, blended; male with crest brownish red or deep vermilion, back and rump deep brownish red; tail 3.85 or more (usually more than 4.00).

c^1. *Adult male* with black of lores distinctly connected across forehead.

Adult male: Head, neck, and lower parts fine vermilion, the crest much duller (more like color of upper parts). *Adult female* with breast, etc., grayish buffy or light tawny; upper parts olive-grayish (wings and tail much as in the male); capistrum (*i.e.*, differently colored patch round base of bill, including upper part of throat) dull light grayish. Length 7.50–9.25, wing (male) 3.55–4.00 (3.70), tail 3.90–4.60 (4.20), culmen .72–.82 (.78), depth of bill through base .60–.67 (.62), tarsus .90–1.00 (.97). *Eggs* .99 × .73. *Hab.* Eastern United States, north regularly to 40° (casually or irregularly nearly to northern border), west to edge of Great Plains, south to Gulf coast (Florida to southern Texas)........... 593. **C. cardinalis** (Linn.). **Cardinal.** (74.)

c^2. *Adult males* with black of lores not connected across forehead; bill stouter.

d^1. Colors paler than in *C. virginianus*, the female with the capistrum grayish white and very indistinct.

e^1. Larger: Length (male) about 9.40–9.50, wing 4.00–4.15 (4.06), tail 4.60–5.10 (4.97), culmen .85–.90 (.86), depth of bill at base .65–.70 (.68), tarsus 1.07–1.12 (1.08). *Eggs* 1.00 × .75. *Hab.* Western Mexico, south to Mazatlan, north to southern Arizona............... 593*a*. **C. cardinalis superbus** Ridgw. **Arizona Cardinal.**

e^2. Smaller: Length (male) about 8.00–8.50, wing 3.60–3.80 (3.70), tail 4.30–4.60 (4.46), culmen .75–.85 (.79), depth of bill at base .62–.68 (.66), tarsus .95–1.05 (1.01). *Eggs* 1.00 × .72. *Hab.* Lower California......... 593*b*. **C. cardinalis igneus** (Baird). **Saint Lucas Cardinal.**

d^2. Colors darker and richer than in *C. cardinalis*, the female with the capistrum dark grayish, or grayish black, very distinct.

e^1. Larger: Wing (adult males) usually more than 3.60, tail 4.20, or more.

Wing 3.50–3.85 (3.67), tail 4.20–4.50 (4.29), culmen .80–.90 (.87), depth of bill at base .60–.70 (.67), tarsus .95–1.05 (1.02). *Hab.* Eastern and central Mexico (north to Mirador).

C. cardinalis coccineus Ridgw. **Mexican Cardinal.**[1]

e^2. Smaller: Wing (adult males) less than 3.60, tail less than 4.20.

f^1. Brighter colored, with smaller bill; female with breast, etc., bright ochraceous-tawny, back tawny olive, the capistrum deep black; wing (adult males) 3.30–3.40 (3.32), tail 3.85–4.10 (3.98), culmen .80–.85 (.81), depth of bill at base .62–.65 (.63), tarsus .95–1.00 (.97). *Hab.* Yucatan.

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[1] *Cardinalis virginianus* var. *coccineus* Ridgw., Am. Jour. Sci. & Arts, v. Jan. 1873, 39.

C. cardinalis yucatanicus Ridgw. **Yucatan Cardinal.**[1]

*f*². Darker colored, the adult female with breast, etc., dull tawny, back deep broccoli-brown, the capistrum blackish slate; wing (adult males) 3.55, tail 4.00, culmen .80–.82, depth of bill at base .67–.70, tarsus 1.00. *Hab.* Island of Cozumel, Yucatan.

C. cardinalis saturatus Ridgw. **Cozumel Cardinal.**[2]

*b*². Feathers of crest stiffish, more distinctly outlined (crest much as in *C. phœniceus*); male with crest light scarlet-vermilion, back light brownish red, the rump decidedly lighter and purer red; tail not more than 3.80 (?). (Female unknown.)

Wing (adult males) 3.35–3.45, tail 3.80, culmen .70–.75, depth of bill at base .58 (the bill more depressed and with more curved culmen than in any of the races of *C. cardinalis*); tarsus .90. *Hab.* Southwestern Mexico (Colima, etc.).

C. carneus (Less.). **Colima Cardinal.**[3]

*a*². Culmen much arched; upper mandible not as deep as lower, grooved anterior to nostril, its edge not lobed, and the angle very abrupt; color of bill in life (and in dried skins also) whitish brown; feathers round base of bill red, except on chin and anterior border of malar region. *Adult female* with under wing-coverts buff.

Adult male: General coloration much like that of *C. carneus*, but red of a rather lighter hue, the chief difference consisting in the much more restricted black capistrum and the totally different color (as well as shape) of the bill; wing 3.30–3.55, tail 3.30–3.90. *Hab.* Northern coast of South America (Trinidad, Venezuela, Colombia, etc.).

C. phœniceus Gould. **Venezuelan Cardinal.**[4]

Genus **PYRRHULOXIA** Bonaparte. (Page 382, pl. CXII., fig. 2.)

Species.

Adult male: Crest, feathers bordering base of bill all round, tail-feathers, and basal portions of quills and secondaries, dark brownish red, or burnt-carmine; throat and median lower parts pure carmine-red, the lateral lower parts light grayish; rest of upper parts plain grayish; bill bright yellow or orange in summer, more horn-colored in winter or young birds. *Adult female:* Upper parts as in the male, but red of crest, wings, and tail more restricted, as well as duller; lower parts light brownish gray (without any red). *Young:* Like adult female, but bill more or less dusky. Length 7.50–8.75, wing 3.60–3.85, tail 4.35–4.80. *Nest* and eggs like those of *Cardinalis*, but the latter smaller, averaging .94 × .73. *Hab.* Northern Mexico and contiguous border of United States, from southern Texas to southern Arizona and Lower California.. 594. **P. sinuata** BONAP. **Texan Cardinal.** (75.)

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[1] New subspecies.

[2] *Cardinalis saturatus* Ridgw., Descr. New Sp. B. Cozumel, Feb. 26, 1885, 4.

[3] *Cardinalis carneus* Less., Rev. Zool. 1843, 209.

[4] *Cardinalis phœniceus* Gould, P. Z. S. 1837, 111.

GENUS **HABIA** REICHENBACH. (Page 383, pl. CXI., fig. 2.)

Species.

COMMON CHARACTERS.—*Adult males* with head, wings, and tail black; two broad bands across wing, patch at base of quills, and terminal portion of inner webs of outer tail-feathers, white; under wing-coverts rose-pink or gamboge-yellow. *Adult females* with wings and tail similar, but black duller and white markings more restricted; other black portions of male replaced by brownish, streaked with dusky; under wing-coverts saffron-yellow or lemon-yellow; breast streaked. *Nest* a very thin saucer-shaped structure, composed of wiry rootlets, etc., in bushes or low trees. *Eggs* 2–4, bluish green or greenish blue, speckled with clove-brown, vandyke-brown, or burnt-umber.

*a*¹. Under wing-coverts rose-red (male) or saffron-yellow (female).

Adult male: Head, neck, back, wings, and tail uniform deep black, the wings and tail varied with white, as described above; breast (sometimes throat also) and under wing-coverts pure rose-red; rest of lower parts, with rump, pure white. *Adult female:* Black of male replaced by dull brownish, streaked with dusky; breast brownish white, streaked with dusky; under wing-coverts pale salmon-yellow or saffron-yellow. *Young male, first autumn:* Wings and tail as in adult male; head, neck, and back brown, streaked with black; throat and sides brownish white, or pale brownish, streaked with black; chest more or less extensively tinged with rose-red; under wing-coverts pale rose-red or rose-pink. Length 7.00–8.50, wing 3.90–4.15, tail 3.25–3.55. *Eggs* .95 × .67. *Hab.* Eastern North America, north to Canada, breeding from northern United States northward; south, in winter, through Cuba and Middle America to northern South America.

595. **H. ludoviciana** (LINN.). **Rose-breasted Grosbeak.**

*a*². Under wing-coverts clear gamboge-yellow, or lemon-yellow.

Adult male: Head black, the throat, and sometimes a postocular stripe (occasionally a stripe on middle of crown also), light cinnamon-ochraceous; wings and tail black, varied with white, as in *H. ludoviciana;* back mixed black and light cinnamon (sometimes uniform black); rump, collar round hind-neck, and most of lower parts uniform buffy cinnamon; belly and under wing-coverts lemon-yellow; under tail-coverts white. *Adult female:* Above dusky grayish brown, streaked, especially on back and middle line of crown, with pale fulvous or buffy; beneath

pale fulvous or ochraceous, streaked on sides and flanks with dusky, but usually without streaks on breast; belly pale yellowish, and under wing-coverts clear lemon-yellow. *Young:* Much like adult female, but (especially the male) more buffy, the markings more suffused with the ground-color, and remiges and tail-feathers tinged with olive-greenish. Length 7.50–8.90, wing 3.85–4.20, tail 3.40–3.90. *Eggs* 1.02 × .70. *Hab.* Western United States, east to Great Plains, south into Mexico.
596. **H. melanocephala** (Swains.). **Black-headed Grosbeak.**

Genus GUIRACA Swainson. (Page 383, pl. CXI., fig. 4.)

Species.

Common Characters.—*Adult males* plain blue or bluish black, with or without rufous or chestnut wing-bands; *adult females* and *young* brownish.

a^1. Middle and greater wing-coverts tipped with chestnut, rufous, or buffy, producing two distinct bands across wing; first quill longer than fifth. *Nest* a compact, deeply cup-shaped structure, composed of dried grasses, plant-fibres, etc., placed in bushes, tall weeds, etc. *Eggs* 3–4, plain pale greenish blue or bluish white. (*Adult males:* Uniform dull ultramarine-blue; lores black; wings and tail blackish, the feathers edged with bluish, the former with two broad rufous bands. *Adult females:* Above fulvous-brown, beneath paler fulvous; wings and tail dusky, the former with two light fulvous bands. *Young:* Similar to adult female, but colors more ochraceous, the wing-bands more rusty, etc. *Immature males:* The plumage of the adult male and female mixed, in various proportions, according to age. *Adult males in winter:* Blue of back, breast, etc., more or less obscured by light brownish or buffy tips to feathers.) (*Guiraca* Swains.)

b^1. Smaller; blue deeper or more purplish; wing-bands much narrower, deeper rufous, that across tips of greater coverts usually not more than .15 broad (often not more than .10), and deep rufous like the other band; white borders to lower tail-coverts, etc., narrower, sometimes nearly obsolete; *female* and *young* averaging browner or more tawny; length 6.35–7.50, wing (male) 3.35–3.60 (3.50), tail 2.70–2.90 (2.82), exposed culmen .62–.66 (.64), depth of bill at base .52–.58 (.55). *Eggs* .80 × .66. *Hab.* More southern eastern United States; north, regularly (but very locally), to Pennsylvania, Kentucky, Kansas, etc., casually, much farther; west to Indian Territory (and eastern Texas?); in winter, Cuba, Yucatan, etc .... 597. **G. cærulea** (Linn.). **Blue Grosbeak.**

b^2. Larger; blue rather lighter and less purplish; wing-bands much broader, paler rufous, that across tips of greater coverts usually .20–.30 wide, and decidedly paler than the anterior band; white borders to lower tail-coverts, etc., much more conspicuous, rarely, if ever, indistinct; *female* and *young* averaging grayer, or less tawny; length 7.00–8.00, wing (male) 3.60–3.85 (3.68), tail 3.00–3.20 (3.08), exposed culmen .62–.68 (.65), depth of bill at base .55–.60 (.56). *Eggs* .90 × .65. *Hab.* Western United States, north to Colorado, California, etc., south throughout Mexico.

597*a*. **G. cærulea eurhyncha** Coues. **Western Blue Grosbeak.**[1]

*a*². Wing-coverts without differently colored tips; first quill shorter than seventh (sometimes shorter than eighth). (*Cyanoloxia* Bonap.)

Adult male: Entirely dull blue-black, with a superficial tinting of dull indigo-blue, most obvious on forehead, superciliary region, cheeks, and lesser wing-coverts. *Adult female:* Uniform rich vandyke-brown (or deep burnt-umber), browner above, rather lighter and brighter brown beneath. Length about 6.00–6.50, wing 3.00–3.30, tail 2.60–3.00, exposed culmen .75–.85, depth of bill at base .65–.75. *Hab.* Central America, north to Guatemala and eastern Mexico (Vera Cruz).

G. cyanoides concreta (Du Bus). **Blue-black Grosbeak.**[2]

Genus **PASSERINA** Vieillot. (Page 385, pl. CXII., fig. 5.)

Species.

Common Characters.—*Adult males* very brightly colored, with more or less of blue in the plumage, often in combination with other rich colors, as red, yellow, purple, or green. *Adult females* and *young* plain brownish above, beneath similar, but lighter. *Nests* in bushes. *Eggs* whitish, sometimes spotted with reddish brown, oftener plain.

*a*¹. Bill larger and more swollen, the lateral outlines decidedly convex, and the cutting-edge of upper mandible convex in middle portion. (Subgenus *Cyanocompsa* Cabanis.[3])

*b*¹. Gonys not more than .30; wing not more than 2.85. (*Adult males* dark blue, becoming bright rich blue on forehead, superciliary region, cheeks, rump, and lesser wing-coverts; *female* and *young* brown, paler beneath, the throat and middle of belly whitish.)

*c*¹. Blue a rich dark marine-blue shade, brightening on forehead, etc., into azure; length about 5.00, wing 2.60–2.85, tail 2.20–2.35, exposed culmen .40–.45. *Hab.* Southern and eastern Mexico, north to lower Rio Grande Valley.

P. parellina (Bonap.). **Blue Bunting.**[4]

*c*². Blue an indigo shade, brightening on forehead, etc., into cerulean-blue (almost turquoise on forehead); length about 5.00, wing 2.80, tail

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[1] *Guiraca cærulea,* var. *eurhyncha* Coues, Am. Nat. viii. Sept. 1874, 563.

Although two of the three characters originally ascribed (*i.e.,* larger size and different color of bill) fail of substantiation, the third (larger size), taken in connection with well-marked differences of plumage, is quite sufficient to characterize the western (or, rather, southwestern) bird as a well-defined race.

[2] *Cyanoloxia concreta* Du Bus, Bull. Ac. Brux. xxii. 1855, 150.

[3] *Cyanocompsa* Cab., J. f. O. 1861, 4. Type, *Cyanoloxia parellina* Bonap.

[4] *Cyanoloxia parellina* Bonap., Consp. i. 1850, 502. *Passerina parellina* Ridgw., Pr. U. S. Nat. Mus. iii. 1880, 182.

2.55, exposed culmen .45. *Hab.* Western Mexico (Manzanillo Bay).

P. parellina indigotica RIDGW. **Turquoise-fronted Bunting.**[1]

b^2. Gonys more than .30; wing more than 2.85.

Young male (adult male and female unknown): Above brown (of a tint intermediate between bistre and raw-umber); beneath similar but paler; quills edged with ash-gray; length (skin) 5.50, wing 2.90, tail 2.50, exposed culmen .50, gonys .32, depth of bill at base .42, tarsus .70. *Hab.* Southern Mexico (Tehuantepec).

P. sumichrasti RIDGW. **Sumichrast's Bunting.**[2]

a^2. Bill smaller and less swollen, with lateral outlines nearly straight, and cutting-edge of upper mandible straight, or even concave in middle portion. (Subgenus *Passerina* VIEILL.)

b^1. Exposed culmen less than .45; depth of bill at base equal to or greater than length of bill from nostril.

c^1. Belly blue, white, purple, or dull buffy.

d^1. Wing with one or two white or pale buffy bands; belly pure white.

Adult male: Head, neck, and upper parts turquoise-blue, the back darker and duller; middle wing-coverts broadly and greater coverts narrowly tipped with white (sometimes tinged with ochraceous); breast (sometimes sides also) deep ochraceous, or tawny; rest of lower parts white. *Adult female:* Above grayish brown, tinged with bluish on rump, the wing-coverts tipped with dull whitish or buffy; anterior lower parts pale dull buffy, deeper on chest, and fading into white on belly and lower tail-coverts. *Young:* Similar to adult female, but without blue tinge on rump. Length 5.00–6.25, wing 2.70–2.95, tail 2.30–2.80. *Eggs* .74 × .55, plain bluish white, or very pale greenish blue. *Hab.* Western United States, east to Great Plains, south, in winter, to western Mexico.

599. **P. amœna** (SAY). **Lazuli Bunting.**

d^2. Wing without any distinct light bands; belly not white, or else breast more or less distinctly streaked with darker.

e^1. Culmen gently curved; cutting-edge of upper mandible straight, or even faintly convex. *Adult male:* Head, neck, and median lower parts rich ultramarine-blue, changing gradually to rich cerulean-blue on rest of plumage, the hidden portion of wing- and tail-feathers blackish; lores black. *Adult female:* Above brown, grayer on rump; beneath pale buffy brownish, becoming nearly or quite white on belly, deeper and more or less streaked with darker on breast and sides. *Young:* Similar to adult female, but browner. Length 4.75–5.75, wing 2.60–2.80, tail 2.20–2.50. *Eggs* .73 × .53, similar in color to those of *P. amœna* (sometimes pure white). *Hab.* Eastern United States and more southern British Provinces, west to edge of Great Plains; south, in winter, to Veragua.

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[1] New subspecies; type No. 30142, U. S. Nat. Mus., ♂ ad., Manzanilla Bay, Feb. 1863; John Xantus.

[2] New species; type, No. 59683, U. S. Nat. Mus., ♂ juv., Tehuantepec City, Oct. 28, 1869; F. Sumichrast.

598. **P. cyanea** (Linn.). **Indigo Bunting.**

*e*². Culmen strongly curved; cutting-edge of upper mandible distinctly concave. *Adult male:* Forehead, superciliary region, lesser wing-coverts, and rump lavender-blue or purplish; crown and occiput wine-red, varying to vermilion; back and scapulars maroon-purplish; sides of head and neck, and lower parts, generally plum-purplish, changing to auricula-purple or maroon on chest, the throat usually more reddish; lores black. *Adult female:* Above plain brownish; beneath entirely isabella-color, or dull grayish buff.

*f*¹. Rather larger, or with longer wing and tail; *adult male* with red on occiput duller, purple of throat more reddish (sometimes decidedly red), flanks duller and grayer, and rump bluer; length about 5.50, wing (male) 2.65–2.80 (2.71), tail 2.30–2.50 (2.39). *Eggs* .78 × .58, plain dull bluish white. *Hab.* Eastern Mexico, north to lower Rio Grande Valley in Texas, south to Puebla.. 600. **P. versicolor** (Bonap.). **Varied Bunting.**

*f*². Rather smaller, or with shorter wing and tail; *adult male* with red on occiput brighter, purple of throat less reddish (never decidedly red?), flanks brighter plum-purple, and rump more purplish blue, or lavender; length about 5.50, wing (male) 2.50–2.65 (2.53), tail 2.05–2.30 (2.18). *Hab.* Lower California and western Mexico (vicinity of Mazatlan)..... 600*a*. **P. versicolor pulchra** Ridgw. **Beautiful Bunting.**[1]

*c*². Belly red or yellow.

*d*¹. Tail purplish brown (male) or green (female). *Adult male:* Head and neck purplish smalt-blue; eyelids, and entire lower parts, including chin and throat, vermilion-red; back and scapulars yellowish green; rump dull purplish red. *Adult female* and *young male:* Above plain olive-green, including tail; beneath dull olive yellowish. *Young:* Above dull olive, the wing-coverts indistinctly tipped with paler; beneath dull pale grayish buffy, the breast and sides very indistinctly clouded with grayish brown. Length 4.25–5.50, wing about 2.60–2.80, tail 2.45–2.60. *Eggs* .77 × .57, bluish white, speckled, chiefly on or round larger end, with reddish brown. *Hab.* Southern Atlantic and

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[1] New subspecies; type, No. 87540, U. S. Nat. Mus. Miraflores, Lower California, April 4, 1882; L. Belding.

Gulf States, north to North Carolina and southern Illinois; south, in winter, through eastern Mexico and Central America to Panama................ 601. **P. ciris** (LINN.). **Painted Bunting.**

*d*². Tail blue (duller in female). *Adult male:* Top of head bright yellowish green; rest of upper parts turquoise-blue, the back tinged with green; lores, eyelids, and lower parts gamboge-yellow, deepening into orange on chest. *Adult female:* Above grayish olive, tinged with green (especially on head), changing to dull grayish blue on upper tail-coverts and tail; lores, eyelids, and lower parts dull light-yellowish; tinged with olive on chest and sides. Length about 4.50–5.00, wing 2.45–2.75, tail 2.00–2.40. *Hab.* Southwestern Mexico (Puebla and Tehuantepec to Colima).

P. leclancheri LAFR. **Leclancher's Bunting.**[1]

*b*². Exposed culmen more than .45; depth of bill at base less than length of bill from nostril.

Adult male: Rich cobalt-blue, more purplish on top of head, and changing gradually to fine cerulean-blue on posterior upper parts; eyelids white; lores blackish; feathers of chest, breast, and upper belly bright vermilion or scarlet immediately beneath the surface; lower belly, flanks, and under tail-coverts uniform delicate flesh-pink. *Adult female:* Above dull brown, changing to dull light grayish blue on rump, upper tail-coverts, and tail; lower parts light tawny brown, changing to pinkish buff on belly and lower tail-coverts. Length 5.25–5.55, wing 2.70–2.85, tail 2.20–2.30. *Hab.* Southern Mexico (Tehuantepec).

P. rositæ (LAWR.). **Rosita's Bunting.**[2]

GENUS **SPOROPHILA** CABANIS. (Page 386, pl. CX., fig. 7.)

Species.

COMMON CHARACTERS.—*Adult males* varied with black and white, or pale cinnamon, or grayish (or all), the under wing-coverts and axillars, and spot at base of quills (sometimes concealed by primary coverts), always white. *Adult females* plain brownish above, the wing with or without whitish bands; lower parts plain olive or dull buffy.

*a*¹. Middle and greater wing-coverts tipped with white, forming two more or less distinct bands across wing.

Adult male: Top and sides of head, back, scapulars, wings, upper tail-coverts, tail, and band across chest, black; rump brownish, or brownish gray; spot on lower eyelid, chin, throat, broad collar round neck (sometimes interrupted on hind-neck), and rest of lower parts (except black chest-band), white or pale buffy. *Adult female:* Above plain olive, rather lighter on rump, the wings varied by two whitish bands across tips of middle and greater coverts; lower parts dull light olive-buffy. *Immature male:* Variously intermediate in plumage, according to age, between adult male and female, as described above, several years evidently being required to attain the perfect plumage. Length 3.75–4.50, wing 1.90–2.10, tail 1.85–2.05. *Nest* in bushes, composed of fine rootlets, dried grasses, etc., horse-hairs, etc., very thin, sometimes semi-pensile. *Eggs* (unknown). *Hab.* Lower Rio Grande Valley, in Texas, south through eastern Mexico and Central America to Costa Rica.

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[1] *Passerina leclancheri* LAFR., Mag. Zool. 1841, Ois. pl. 22.

[2] *Cyanospiza rositæ* LAWR., Ann. Lyc. N. Y. x. Feb. 1874, 397.

602. **S. morelleti sharpei** LAWR. **Sharpe's Seedeater.**

a^2. Wing-coverts without lighter tips.

b^1. *Adult male:* Top and sides of head, back, scapulars, wings, upper tail-coverts, tail, and band across chest black; rump and lower parts, posterior to black chest-band, pale tawny or cinnamon-buff; chin, throat, and sides of neck white, or buffy white. *Adult female:* Above plain grayish brown; beneath pale grayish buffy, shaded with grayish brown across chest. *Immature male:* Similar to adult, but back, scapulars, wings, upper tail-coverts, and tail brownish gray, instead of black. Wing about 2.10–2.25, tail 1.90–2.00. *Hab.* Western Mexico, north to Mazatlan and Guanajuato, south to Tehuantepec.

S. torqueola BONAP. **Ochraceous-rumped Seedeater.**[1]

b^2. *Adult male:* Entirely black, except under wing-coverts and axillars and a spot at base of quills (the latter sometimes concealed by primary coverts), which are pure white. *Adult female:* Uniform greenish olive, paler below. Wing about 2.10–2.25, tail 1.95–2.20. *Hab.* Eastern Mexico (Vera Cruz) and south to Costa Rica.

S. corvina SCL. **Black Seedeater.**[2]

GENUS **EUETHEIA** REICHENBACH. (Page 386, pl. CX., fig. 8.)

Species.

COMMON CHARACTERS.—Above plain olive-green, beneath blackish, grayish, or whitish. *Adult male* with head and chest (sometimes nearly whole lower parts) black, the former with or without yellow markings. *Adult female* with the black and yellow wanting, or but faintly indicated, or (in *E. canora*) with chin and upper throat chestnut-rufous and a band of yellow across lower throat, extending upward behind ear-coverts to above eyes.

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[1] *Spermophila torqueola* BONAP., Consp. i. 1850, 495.

[2] *Spermophila corvina* SCL., P. Z. S. 1859, 379. *Sporophila corvina* CASS., Pr. Ac. Phil. 1865, 169.

NOTE.—A fourth Mexican species is *S. parva* (LAWR.),—*Spermophila parva* LAWR., Ann. N. Y. Ac. Sci. ii, 1883, 382),—from Tehuantepec. I have seen the type, which is a female or young bird, and believe it to be a very distinct species, the adult male of which is unknown. The type being now in Europe, I am unfortunately not able to include the species in the above synopsis.

a^1. Head without trace of yellow.

Adult male: Head and lower parts dull black, the latter becoming grayish posteriorly; rest of plumage dull olive-green. *Adult female:* Head and lower parts dull olive-grayish, upper parts as in the male. *Immature male:* Similar to adult female, but fore-part of head, chin, throat, and middle of chest blackish. Length about 4.00–4.25, wing 2.00–2.10, tail 1.75–1.80. *Nest* in bushes, composed of dried grasses, etc. *Eggs* 3–5, .66 × .48, white or greenish white, speckled, chiefly on or round larger end, with umber-brown and burnt-umber. *Hab.* Bahama Islands; accidental or casual in southern Florida....... 603. **E. bicolor** (Linn.). **Grassquit.**

a^2. Head with more or less of yellow.

b^1. *Adult males* with patch covering chin and upper part of throat, streak or spot over lores, and edge of wing bright yellow, the rest of head, with lower throat and chest (sometimes breast and upper belly also), black; *adult females* without chestnut on chin or throat, the plumage also devoid of black or sharply defined yellow markings on head.

c^1. *Adult male* with black of head restricted to forehead, lores, part of malar region, lower throat, and chest, the rest of head (where not occupied by yellow markings) olive-green. *Hab.* Greater Antilles (Cuba, Jamaica, Haiti, and Porto Rico).

E. olivacea (Linn.). **Yellow-faced Grassquit.**[1]

c^2. *Adult male* with whole head (where not occupied by yellow markings) black; black of chest continued over breast to belly. *Hab.* Middle America, from eastern Mexico to Panama.

E. olivacea pusilla (Swains.). **Mexican Grassquit.**[2]

b^2. *Adult male* with a broad crescent of bright yellow across lower throat, the extremities curving upward behind ear-coverts, and forward above them to eye; rest of head, and a band across chest, black; rest of lower parts light grayish, becoming white on crissum; upper parts olive-green. *Adult female:* Similar to male, but chin and upper throat chestnut-rufous, instead of black, the black on chest wanting. *Hab.* Cuba; accidental at Key West, Florida... [603.1] **E. canora** (Gmel.). **Melodious Grassquit.**[3]

GENUS **SPIZA** BONAPARTE. (Page 384, pl. CXII., fig. 4.)

Species.

COMMON CHARACTERS.—Above brownish gray or grayish brown, the back and scapulars streaked with black; top of head, hind-neck, sides of neck, and ear-coverts plain dull grayish or brownish gray; a white or yellow superciliary stripe, and a similar malar stripe; chin (sometimes throat also) white.

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[1] *Emberiza olivacea* LINN., S. N. ed. 12, 1766, 309.

[2] *Tiaris pusilla* SWAINS., Phil. Mag. i. 1827, 438. *Euetheia pusilla* CAB., Mus. Hein. i. 1850, 146.

[NOTE.—On the island of Cozumel, Yucatan, occurs a local race which combines perfectly the characters of *E. olivacea* and *E. pusilla*. This has been named by me *E. olivacea intermedia*, in Pr. Biol. Soc. Wash. iii. 1885, p. 22.]

[3] *Loxia canora* GMEL., S. N. i. 1788, 858. *Euetheia canora* GUNDL., J. f. O. 1874, 123.

a^1. Lower parts whitish, the breast (sometimes middle of belly also) bright yellow. *Adult male:* Lesser and middle wing-coverts rufous; a black patch, of extremely variable shape and extent, on lower part of throat, sometimes continued posteriorly along middle line of breast, or anteriorly to the chin; breast extensively yellow, the forehead, superciliary stripe, and malar stripe more or less strongly washed or overlaid by the same. *Adult female:* Similar to the male, but much duller, the yellow of breast, malar region, and superciliary stripe fainter and more restricted (often wanting except on breast); throat white, bordered along each side by dusky spots or streaks (the black spot of the male usually obsolete, but sometimes indicated). *Young:* Similar to adult female, but everywhere tinged with dull buffy or pale ochraceous. Length 5.75–6.80, wing 2.80–3.30, tail 2.35–2.90. *Nest* of dried grass-stems, etc., in meadows and on prairies, in bushes, low weeds, or near ground. *Eggs* 3–5, .81 × .61, plain pale blue. *Hab.* Eastern United States (chiefly west of Alleghanies), west to Rocky Mountains, north to Massachusetts, New York, Wisconsin, and Minnesota; south, in winter, through Middle America to northern South America; southwest during migrations to Arizona and Lower California.

604. **S. americana** (GMEL.). **Dickcissel.**

a^2. Lower parts dark gray, becoming whitish on belly and lower tail-coverts. *Adult male:* Plumage of head, neck, and lower parts uniform slate-gray, relieved anteriorly by a distinct superciliary stripe, malar stripe, and broad stripe covering entire chin and throat, white; the two latter separated by a narrow series of black streaks, which continue around posterior border of the white throat-patch, in the gray of the chest; upper parts grayish brown, the back and scapulars narrowly streaked with blackish; belly and lower tail-coverts white, the former tinged with yellow; length about 5.75, wing 2.86, tail 2.56. *Hab.* Chester County, Pennsylvania (only one specimen known).

—. **S. townsendii** (AUD.). **Townsend's Bunting.**[1]

GENUS **CALAMOSPIZA** BONAPARTE. (Page 384, pl. CXII., fig. 3.)

Species.

Adult male in summer: Uniform black, with more or less of a slaty cast, the middle and greater wing-coverts white, forming a very conspicuous patch on wing. *Adult female:* Above brownish gray, streaked with dusky, the white wing-patch smaller; lower parts white, streaked on breast and sides with dusky. *Adult male in winter:* Similar to adult female, but feathers of lower parts (especially on belly) black beneath the surface, this showing when feathers are disarranged. *Young:* Similar to adult female, but more buffy, the feathers of upper parts bordered with buffy white, and streaks on lower parts narrower. Length 6.12–7.50, wing 3.20–3.60, tail 2.85–3.35. *Nest* and *eggs* not distinguishable with certainty from those of *Spiza americana*, the average measurements of the latter being .87 × .65. *Hab.*

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[1] See page 354, A. O. U. Check List.

Great Plains, breeding from middle Kansas northward to or beyond the United States boundary, migrating south and southwest, in winter, to Texas, New Mexico, Arizona, Lower California, and northern Mexico; occasional west of Rocky Mountains (Utah, etc.), and accidental in Massachusetts.

605. **C. melanocorys** STEJN. **Lark Bunting.**

FAMILY TANAGRIDÆ.—THE TANAGERS. (Page 321.)

Genera.

a^1. Wing less than 3.00, tail less than 2.00; bill very short and broad at base, the exposed culmen less than half as long as tarsus, and less than the width of the bill at base; tail less than half as long as wing.
Euphonia. (Page 453.)

a^2. Wing more than 3.00, tail more than 2.50; bill moderately lengthened, not broader than deep at base, the exposed culmen nearly or quite as long as the tarsus, and much greater than width of bill at base; tail more than half as long as wing.. **Piranga.** (Page 453.)

GENUS EUPHONIA DESMAREST. (Page 453, pl. CXIII., fig. 5.)

Species.

Adult male: Top of head and hind-neck uniform light blue; forehead dark rusty or chestnut, margined behind by black; rest of head and neck, with upper parts generally, uniform glossy blue-black, inclining to purplish steel-blue; lower parts (except chin and throat) plain orange-rufous. *Adult female:* Top of head colored as in the male; upper parts olive-green, lower parts, including chin and throat, paler and more yellowish olive-green. Length about 4.70, wing 2.75, tail 1.80. *Eggs* "creamy white, with a few scattered spots and blotches, principally at the larger end, of two shades of brown." (SCLATER.) *Hab.* Mexico and Central America, south to Veragua; north to Chihuahua (and southern Texas?).

606. **E. elegantissima** (BONAP.). **Blue-headed Euphonia.**

(76.) GENUS PIRANGA VIEILLOT. (Page 453, pl. CXIII., fig. 1.)

Species.

COMMON CHARACTERS.—*Adult males* with more or less of red in the plumage, often chiefly or entirely red. *Adult females*, in most species, olive-greenish above, yellowish beneath. *Young (in nestling plumage)* with lower parts distinctly streaked with grayish or dusky on a whitish or yellowish ground. *Nest* on trees, usually on lower horizontal branch, saucer-shaped, thin, constructed of wiry dead grass-stems, etc. *Eggs* 3–5, pale bluish or greenish, spotted or speckled with brown.

a^1. Wings plain-colored, without lighter bands or other markings.
  b^1. Wing decidedly more than 3.25; adult males with lower parts entirely red.
    c^1. Cutting-edge of upper mandible without angle or tooth-like projection

on middle portion. (*Adult males* plain vermilion-red, darker and duller on upper surface. *Adult females* plain ochraceous-olive or dull olive-yellowish above, dull light saffron-yellow beneath.)

*d*¹. Smaller, with relatively shorter bill, wings, and tail, and deeper or darker colors; length 7.00–7.95, wing 3.55–3.95 (3.69), tail 2.80–3.15 (2.99), culmen .82–.90 (.86), tarsus .70–.80 (.74). *Eggs* .92 × .68, light greenish blue, speckled or spotted, chiefly on larger end, with purplish brown and vandyke-brown. *Hab.* Eastern United States, north regularly to New Jersey, Ohio, Illinois, etc., irregularly or casually to Connecticut, Ontario, and even Nova Scotia; west to edge of Great Plains; south, in winter, through western Cuba, eastern Mexico, and Central America to northern South America.

610. **P. rubra** (Linn.). **Summer Tanager.**

*d*². Larger, with relatively longer bill, wings, and tail, and with colors lighter; length 7.90–8.50, wing 3.70–4.10 (3.94), tail 3.00–3.60 (3.26), culmen .88–.98 (.93), tarsus .75–.85 (.80). *Eggs* .93 × .69. *Hab.* Western Mexico and southwestern United States, north to Colorado (Denver) and Arizona.

610*a*. **P. rubra cooperi** Ridgw. **Cooper's Tanager.**

*c*². Cutting-edge of upper mandible with a distinct angle or tooth-like projection in middle portion.

*d*¹. Culmen decidedly shorter than tarsus.

*e*¹. *Adult male:* Rich, pure scarlet, with wings and tail uniform deep black. *Adult female:* Olive-green above, the wings and tail more grayish (sometimes dusky grayish); lower parts dull light greenish yellow. Length 6.50–7.50, wing 3.55–3.90, tail 2.80–3.25, exposed culmen about .55–.60. *Eggs* .94 × .65, essentially similar in coloration to those of *P. rubra*. *Hab.* Eastern United States and southern Canada, west to edge of Great Plains; in winter, south through West Indies, eastern Mexico, and Central America to Peru and Bolivia.

608. **P. erythromelas** Vieill. **Scarlet Tanager.**

*e*². *Adult male:* Above dull red, strongly tinged with grayish on back, etc.; lower parts light vermilion, strongly shaded on sides and flanks with brownish gray; ear-coverts dull grayish red, or reddish gray, narrowly streaked with white. *Adult female:* Above olive-green, the back more grayish; beneath olive-yellow, strongly shaded with olive on sides and flanks. *Young:* Above olive (more grayish on back), the top of head indistinctly, the back distinctly, streaked with dusky; lower parts pale yellow, the chest, breast, upper belly, sides, and flanks distinctly streaked with blackish. Length 7.30–8.20, wing 3.70–4.20, tail 3.20–

3.60, exposed culmen .62–.70. *Hab.* Mexico and Guatemala, and north to southern Arizona and New Mexico.

609. **P. hepatica** Swains. **Hepatic Tanager.**

*d*². Culmen (from extreme base) not shorter than tarsus. (Tooth on edge of upper mandible very prominent; bill much swollen for basal half. *Adult males* uniform deep brownish red above, brighter brownish red beneath, the sides and flanks, however, like upper parts. *Adult females* deep olive-green above, bright yellowish olive beneath, the throat and sides of forehead sometimes inclining to deep saffron-yellow.)

*e*¹. Ear-coverts and malar region uniform deep brownish red (male) or olive-green (female) like crown; length about 6.50–7.00, wing 3.40–3.65, tail 3.00–3.10, exposed culmen .70–.75. *Hab.* From Nicaragua to Ecuador and Bolivia.

P. testacea Scl. & Salv. **Brick-colored Tanager.**[1]

*e*². Ear-coverts and malar region dull brownish or brownish gray (male) or olive-gray (female), narrowly but distinctly streaked with whitish; length about 7.00–7.25, wing 3.70–4.00, tail 3.20–3.30, exposed culmen .65–.75. *Hab.* Guatemala and British Honduras.

P. figlina Salv. & Godm. **Brown-red Tanager.**[2]

*b*². Wing not more (usually decidedly less) than 3.25; *adult males* with red confined to throat and upper chest, or to throat, under wing-coverts, and under tail-coverts.

*c*¹. Back, scapulars, and rump dull gray; ear-coverts lighter gray; sides and flanks brownish gray, middle of breast and belly dull light buffy. *Adult male:* Whole top of head and wings dull brownish red; throat, under wing-coverts, and lower tail-coverts pink, the latter inclining more to flesh-color (occasionally tinged with salmon-color). *Adult female:* Similar to male, but pink of throat and under tail-coverts very indistinct (sometimes wanting, or replaced by pale salmon-color), that of under wing-coverts replaced by pale yellowish, and brownish red of crown, wings, and tail less pronounced. Length about 6.00–6.50, wing 3.00–3.25, tail 2.85–2.90. *Hab.* Yucatan, including Cozumel.

P. roseigularis Cabot. **Rose-throated Tanager.**[3]

*c*². Upper parts (except head, in adult male) olive-green, lower parts (except throat and upper chest of adult male) olive-yellow. *Adult*

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[1] *Pyranga testacea* Scl. & Salv., P. Z. S. 1868, 388.

[2] *Pyranga figlina* Salv. & Godm., Biol. Centr.-Am. i. Dec. 1883, 293.

Having before me, besides the type (from Belize), six adult males from Guatemala, I am unable to detect any differences of coloration distinguishing this species from *P. testacea*, other than those given in the above synopsis. Only one specimen is as dull colored as the type, while two are almost identical in general coloration with a typical adult male of *P. testacea* from Veragua.

[3] *Pyranga roseigularis* Cabot, Bost. Jour. N. H. v. 1847, 416.

male: Head, all round, dull vermilion-red, darker on crown, paler on throat and upper chest. *Immature male:* Similar to adult, but sides of head chiefly olive-green. (*Adult female*, unknown.) Length about 6.00, wing 2.90–3.00, tail 2.70–2.90. *Hab.* Southern Mexico (Temiscaltepec, Guanajuato, Valley of Mexico, etc.).

P. erythrocephala (SWAINS.). **Red-headed Tanager.**[1]

*a*². Wing marked with two white, yellow, or pinkish bands across tips of middle and greater coverts.

*b*¹. Wing more than 3.50.

*c*¹. Exposed culmen not longer than middle toe, without claw; back without streaks. *Adult male:* Back, scapulars, wings, and tail black, the wings with two broad yellow bands; rump, upper tail-coverts, and lower parts gamboge-yellow; head and neck orange or red, brightest on crown, where sometimes almost crimson. *Adult female:* Grayish olive-green above, the wing-bands dull light yellow, or dull yellowish white; lower parts pale grayish yellow, becoming sulphur-yellow on under tail-coverts. *Young:* Essentially like adult female, but paler beneath and more or less distinctly streaked with grayish or dusky, both above and below. Length 6.75–7.75, wing about 3.50–4.10, tail 3.20–3.55. *Eggs* .95 × .65, clear light greenish blue or bluish green, finely and rather sparsely speckled, chiefly on larger end, with clove-brown. *Hab.* Western United States, north to British Columbia, east to edge of Great Plains, south, in winter, to Guatemala.

607. **P. ludoviciana** (WILS.). **Louisiana Tanager.**

*c*². Exposed culmen longer than middle toe, without claw; back distinctly streaked with dusky. *Adult males* with head, neck, and lower parts red, back and scapulars dull brownish red or grayish, broadly streaked with blackish; wing-bands white or pale salmon-pink. *Adult females* with red of males replaced by yellow below and olive-greenish above.

*d*¹. Rather smaller, with relatively much smaller bill; red of adult male much deeper—often intense Chinese-orange, or almost orange-vermilion—the rump and ground-color of back reddish brown or brownish red, and wing-bands usually distinctly pinkish. *Adult female* with yellow of lower parts and olive-green of upper parts deeper. Length (skins) about 7.00–7.50, wing 3.60–3.90, tail 3.25–3.40, exposed culmen .60–.65, depth of bill at base .33–.38. *Hab.* Southern Mexico (north to Jalapa, Mirador, Temiscaltepec, Sonora, etc.) and south to Chiriqui.

P. bidentata SWAINS. **Spotted-winged Tanager.**[2]

*d*². Rather larger, with relatively much larger bill; red of adult male paler and more orange (very nearly the tint of red-lead), the rump and ground-color of back olive-grayish, and wing-bands pure white. *Adult female* with yellow of lower parts and olive of upper parts much paler. Length (of male, before skinning) 8.25, wing 3.85–3.95, tail 3.30–3.50, exposed culmen .70–.75, depth of bill at base .38–.42. *Hab.* Tres Marias Islands, western Mexico. **P. flammea** RIDGW. **Tres Marias Tanager.**[1]

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[1] *Spermagra erythrocephala* SWAINS., Philos. Mag. n. s. i. 1827, 437. *Pyranga erythrocephala* BONAP., Rev. Zool. 1851, 178.

[2] *Pyranga bidentata* SWAINS., Philos. Mag. n. s. i. 1827, 438.

*b*². Wing less than 3.00. (*Adult males* rich scarlet-vermilion, the lores, scapulars, wings, and tail deep black, the wings with two broad bands of pure white across tips of middle and greater coverts. *Adult females* bright olive-green above, yellow beneath; wings and tail grayish dusky, with olive edgings, the former with two white bands, as in males.)

*c*¹. With narrower wing-bands; *adult male* with the red a lighter, more scarlet, tint; *adult females* with the yellow and olive less deep; length (skins) about 5.10–5.50, wing 2.65–2.85, tail 2.30–2.55. *Hab.* Southern Mexico (north to Jalapa, Valley of Mexico, etc.), Guatemala, and Salvador.
P. leucoptera TRUDEAU. **White-winged Tanager.**[2]

*c*². With broader wing-bands; *adult males* with the red of a darker tint (almost carmine on upper parts); *adult females* with the yellow and olive more intense; length (skins) about 4.90–5.20, wing 2.65–2.85, tail 2.35–2.55. *Hab.* Costa Rica and Veragua.
P. leucoptera latifasciata RIDGW. **Broad-banded Tanager.**[3]

FAMILY HIRUNDINIDÆ.—THE SWALLOWS. (Page 322.)

Genera.

*a*¹. Nostrils opening directly upward, and with very little membrane bordering the inner edge.

*b*¹. Wing 5.00, or more; tail decidedly forked (for much more than length of tarsus); adult males (of North American and some tropical species) entirely glossy blue-black. (Largest of the Swallows.)
Progne. (Page 458.)

*b*². Wing decidedly less than 5.00; tail nearly even (forked for much less than length of tarsus); adults (sexes alike in color) not black beneath.

*c*¹. Upper parts parti-colored, the crown and back blue-black, forehead whitish or rusty brown, rump cinnamon or buffy; throat and sides of head chestnut, rest of lower parts whitish medially, grayish brown laterally; edge of outer quill normal.
Petrochelidon. (Page 459.)

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[1] New species; type, No. 50824, ♂ ad., Tres Marias; Col. A. J. Grayson. (Four specimens—two adults of each sex.)

[2] *Pyranga leucoptera* TRUDEAU, Jour. Ac. Sci. Phil. viii. 1839, 160.

[3] New subspecies.

c^2. Upper parts plain grayish brown; lower parts similar, but lighter, becoming white on belly; edge of outer quill roughened with stiff, recurved hooked tips to the barbs... **Stelgidopteryx.** (Page 463.)

a^2. Nostrils opening laterally, and bordered above by a broad membrane, or overhanging scale.

b^1. Tail forked for much more than length of tarsus.

c^1. Tail forked for about half its total length, the outer pair of feathers abruptly narrowed for terminal portion, and inner webs of all (except middle pair) marked with a large whitish spot; lower parts cinnamon or buffy, the throat darker, more rusty. **Chelidon.** (Page 460.)

c^2. Tail forked for much less than half its total length, the outer pair of feathers not abruptly narrowed terminally; inner webs of tail-feathers without white spots; lower parts entirely pure white. **Callichelidon.** (Page 462.)

b^2. Tail forked for less than length of tarsus.

c^1. No feathers on hind part of tarsus; entirely white beneath, the adults brightly colored above...................... **Tachycineta.** (Page 461.)

c^2. A small tuft of feathers on lower portion of tarsus, behind; lower parts white, interrupted by a broad band of grayish brown across chest; upper parts grayish brown............ **Clivicola.** (Page 462.)

GENUS **PROGNE** BOIE. (Page 457, pl. CXIV., fig. 1.)

Species.

COMMON CHARACTERS.—*Adult males* with upper parts uniform glossy blue-black or dark steel-blue (sometimes inclining to violet); lower parts similar to upper surface, or with belly white and elsewhere glossy blue-black, or with anterior portions grayish, the posterior white. *Adult females* with upper parts plain glossy blue-black (sometimes interrupted by a grayish collar), the lower parts dull grayish anteriorly and white posteriorly. *Young:* Similar to adult female (the male two years, or more, in attaining the full plumage).

a^1. *Adult males* with lower parts wholly glossy blue-black, like the upper; *adult females* with steel-blue of upper parts duller and less continuous, usually broken by more or less distinct grayish borders to feathers, the forehead and hind-neck dull grayish; anterior lower parts dull light grayish, or grayish white (centres of feathers darker); sides and flanks similar, but darker; belly and under tail-coverts white.

b^1. Larger, with broader tail-feathers. *Adult male* with feathers of ventral region entirely sooty grayish beneath surface. *Adult females* and *immature males* with anterior and lateral lower parts pale gray, the feathers, especially on chest, with distinctly darker (sooty grayish) centres. Length 7.25–8.50, wing 5.65–6.20, tail 3.00–3.40 (forked for .70–.90). *Nest* in holes of trees or about houses, in boxes, etc. *Eggs* 3–5, .97 × .72, plain pure white. *Hab.* Whole of temperate North America; south, in winter, into Mexico (as far as Guanajuato, Tepic, Mazatlan, etc.).

(77.) 611. **P. subis** (LINN.). **Purple Martin.**

b^2. Smaller, with narrower tail-feathers, and, relatively, more deeply forked tail. *Adult male* with feathers of ventral region marked, beneath surface, with a broad spot, or bar, of white. *Adult female* and *immature male* with whole under portion and sides of head and neck, chest, sides, and flanks, uniform sooty grayish brown, in marked contrast with pure white of belly, anal region, and under tail-coverts. Length about 7.60, wing 5.35–5.60, tail 2.90–3.25 (forked for .65–.90). *Hab.* Cuba and southern Florida; Honduras?

611.1. **P. cryptoleuca** BAIRD. **Cuban Martin.**[1]

a^2. *Adult males* with anterior and lateral lower parts smoky grayish brown (the feathers with more or less distinctly paler tips), the belly, anal region, and lower tail-coverts white; *adult females* similar to adult males, but upper parts less glossy, the forehead always (sometimes whole top of head) dull dark smoky grayish brown.

Adult male with upper parts uniform glossy blue-black, or dark violaceous steel-blue (rather less violaceous than in *P. subis* and *P. cryptoleuca*); length (skin) about 6.30–7.00, wing 5.10–5.40, tail 2.65–2.90. *Hab.* Southern Mexico (north to Vera Cruz), Central America, and northern South America, south to Tobago, Guiana, and western Ecuador.

P. chalybea GMEL. **Gray-breasted Martin.**[2]

GENUS **PETROCHELIDON** CABANIS. (Page 457, pl. CXIV., fig. 3.)

Species.

COMMON CHARACTERS.—*Adults:* Forehead white, pale brownish, or chestnut; top of head uniform glossy blue-black; hind-neck brownish gray, with more or less of chestnut on upper portion; back and scapulars glossy blue-black, the first streaked, more or less, with white; rump cinnamon or cinnamon-buff; upper tail-coverts grayish brown, margined with paler; wings and tail plain dusky; lores black; rest of head (except as described above), including chin and throat, rich chestnut or light cinnamon; sides and flanks (sometimes chest also) grayish brown, more or less tinged with cinnamon; longer under tail-coverts grayish dusky, bordered with white. *Young:* Essentially like adults, but colors much duller, with pattern less sharply defined. *Nest* a gourd- or retort-shaped structure composed of pellets of mud, mixed with a few straws and lined with soft feathers, attached to the face of overhanging cliffs or underneath the eaves of buildings. *Eggs* 3–5, white, speckled or spotted with brown and lilac.

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[1] *Progne cryptoleuca* BAIRD, Review Am. B. i. May, 1865, 277.

Six Cuban and two Floridan specimens of this well-marked species are before me. The adult females and immature males (of which there are four from Cuba and two from Florida in the National Museum collection—the latter from Cape Florida and Clearwater) are exceedingly distinct in plumage from those of *P. subis.* In fact, they resemble so closely the corresponding plumages of *P. dominicensis* GMEL. that I am unable to state how they can be distinguished. *P. dominicensis* has not yet been taken, however, in Cuba.

[2] *Hirundo chalybea* GMEL., S. N. i. 1788, 1026. *Progne chalybea* BOIE, Isis, 1844, 178.

*a*¹. Chin, throat, and sides of head rich chestnut, the lower part of throat with a spot or patch of glossy blue-black.

*b*¹. Larger, with forehead white or pale isabella-color; rump light cinnamon, or cinnamon-buff; *young* with chin and throat (often other parts of the head) usually more or less mixed or spotted with white; tertials and tail-coverts margined with pale rusty or cinnamon; chestnut of head wanting or only faintly indicated, top of head, back, etc., dull blackish, etc.; length 5.00–6.00, wing 4.05–4.55, tail 2.00–2.20. *Eggs* .81 × .55. *Hab.* Whole of North America in summer; in winter, Middle America (and portions of South America?).

612. **P. lunifrons** (SAY.). **Cliff Swallow.**

*b*². Smaller, with forehead rich chestnut, like throat and sides of head (rarely fawn-colored), and rump deeper cinnamon; length about 4.50–5.00, wing 3.95–4.30, tail 2.00–2.20. *Hab.* Mexico and Guatemala.

P. melanogaster (SWAINS.). **Mexican Cliff Swallow.**[1]

*a*². Chin, throat, and sides of head pale cinnamon, the lower part of throat without black spot.

Forehead deep chestnut, and rump deep cinnamon, as in *P. melanogaster*; length about 4.50–4.75, wing 4.00–4.10, tail 1.90–2.00. *Hab.* Hayti, Cuba (and Yucatan?); accidental in Florida.

[612.1.] **P. fulva** (VIEILL.). **Cuban Cliff Swallow.**[2]

GENUS CHELIDON FORSTER. (Page 458, pl. CXIV., fig. 2.)

Species.

COMMON CHARACTERS.—*Adults:* Above glossy dark steel-blue, sometimes tinged with violet, the forehead rusty chestnut; quills and tail-feathers blackish, with a faint dull greenish lustre, the inner webs of the latter (except middle pair) marked with a large spot of white, or very pale rusty; chin, throat, and chest deep cinnamon-rusty, the sides of the chest dark steel-blue or blue-black, sometimes confluent in the middle, thus forming a narrow collar; rest of lower parts varying from rich rusty cinnamon to pale cinnamon-buffy. *Young:* Much paler beneath and duller above than adult, with chin, throat, and chest light rusty, and rusty of forehead indistinct or obsolete. *Nest* a cup- or bowl-shaped structure, entirely open above, composed of pellets of mud, mixed with straws, etc., and lined with soft feathers, attached by one side to the sides or roof of a cave or to timbers within barns and other outbuildings. *Eggs* 3–5, white, speckled with brown and lavender.

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[1] *Hirundo melanogaster* SWAINS., Philos. Mag. n. s. i. 1827, 366. *Petrochelidon melanogaster* CAB., Mus. Hein. i. 1850, 47.

[2] *Hirundo fulva* VIEILL., Ois. Am. Sept. i. 1807, 62, pl. 30. *Petrochelidon fulva* CAB., Mus. Hein. i. 1850, 47.

With five adults of true *P. fulva* from Cuba, and eight of *P. fulva pœciloma* (GOSSE) from Jamaica and Porto Rico, I have no difficulty in easily distinguishing the two forms by the characters pointed out by Professor Baird in "Review of American Birds" (p. 292).

*a*¹. Paler: Lower parts tawny cinnamon or pale rusty in adult male (the chin and throat rusty cinnamon), pale cinnamon-buffy in adult female; length 5.75–7.75, wing about 4.60–4.90, tail 3.70–4.10, forked, in adult male, for about 1.85–2.10. *Eggs* .77 × .54. *Hab.* Whole of North America; south, in winter, through Middle America and West Indies to various parts of South America................ 613. **C. erythrogaster** (Bodd.). **Barn Swallow.**

*a*². Darker: Lower parts bright cinnamon-rusty (much like throat of *C. erythrogaster*), the chin and throat rich rusty chestnut; length about 7.00–8.00, wing 4.60–4.80, tail of adult male 4.15–4.80, forked for 2.25–2.85. *Hab.* Kamtschatka and eastern Siberia in summer; south, in winter, to India. **C. tytleri** (Jerd.). **Kamtschatkan Barn Swallow.**[1]

Genus **TACHYCINETA** Cabanis. (Page 458, pl. CXIV., fig. 6.)

Species.

Common Characters.—Lower parts entirely white. *Adults* glossy dark steel-blue above, or else rich soft velvety bronze-green, varied with tints of purplish, violet, etc., the females usually considerably duller than the males; *in winter*, the secondaries (especially tertials) conspicuously margined with white, but otherwise as in summer. *Young:* Above dull brownish slate. *Nest* in holes, usually of trees, sometimes in cliffs or buildings. *Eggs* 3–6, plain pure white.

*a*¹. Ear-coverts dark steel-blue, or dusky, like upper parts; feathers of lower parts entirely pure white, except at extreme base; upper parts in adult uniform glossy steel-blue, varying to greenish. (Subgenus *Iridoprocne* Coues.[2])

*b*¹. Rump steel-blue (adult) or dull slate (young) like rest of upper parts; no white on sides of forehead.

Adult male: Above rich burnished steel-blue (varying much in shade), the larger wing-feathers and tail blackish, faintly glossed with dull greenish; lores deep black; entire lower parts pure white. *Adult female:* Usually duller above than male, but often undistinguishable. *Young:* Above entirely dull brownish slate. Length 5.00–6.25, wing about 4.50–4.80, tail 2.30–2.50. *Eggs* .75 × .52. *Hab.* Whole of North America; wintering from southern Florida, Cuba, and Gulf coast, south to Guatemala. 614. **T. bicolor** (Vieill.). **White-bellied Swallow.**

*b*². Rump white (the feathers with fine blackish shaft-streaks); a white line on each side of forehead, along upper edge of lores.

Otherwise like *T. bicolor*, but much smaller; length about 4.10–4.80, wing 3.75–3.90, tail 1.80–1.90. *Hab.* Coasts of Central America and southern Mexico, from Isthmus of Panama to Mazatlan and British Honduras.

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[1] *Hirundo tytleri* Jerd., B. Ind. iii. App. 1864, 870. (*H. saturata* Ridgw. Pr. U. S. Nat. Mus. 1883, 95.)

[2] *Iridoprocne* Coues, B. Col. Val. 1878, 412. Type, *Hirundo bicolor* Vieill. (See Baird, Review Am. B. i. 1865, p. 296.)

T. albilinea LAWR. **White-rumped Swallow.**[1]

a^2. Ear-coverts partly or mainly white; feathers of lower parts abruptly grayish beneath the surface; upper parts in adult soft, metallic (but not burnished), green or greenish bronze, varied with tints of purplish, purplish bronze, violet, etc. (Subgenus *Tachycineta.*)

Adult male: Top of head, hind-neck, back, and scapulars rich green, either the head and neck or dorsal region, or both, usually overlaid by a more or less distinct wash of bronze or purple; rump and upper tail-coverts rich bluish green or bluish, usually mixed with rich plum-purple; a white patch on each side of rump, these in life often brought close together so as apparently to form a continuous white band; entire lower parts, including ear-coverts and line above posterior half (or more) of eye, pure white, but the feathers immediately beneath surface grayish. *Adult female:* Similar to the male, but much duller, the ear-coverts and hind-neck dull grayish, the former, however, more or less mixed with white. *Young:* Similar to same stage of *T. bicolor*, but with feathers of lower parts distinctly grayish beneath the surface, this showing through on anterior portions, especially on breast. Length 4.75–5.50, wing about 4.30–4.75, tail 1.95–2.20. *Eggs* .73 × .51. *Hab.* Western United States, east to Rocky Mountains, south, in winter, to Costa Rica.

615. **T. thalassina** (SWAINS.). **Violet-green Swallow.**

GENUS **CALLICHELIDON** BRYANT.[2] (Page 458.)

Species.

Adult male: Above soft dull metallic green (not burnished), changing to more bluish green on wings, rump, upper tail-coverts, and tail; entire lower parts, including sides of head below level of eyes, pure white. *Adult female:* Similar to male, but suborbital region and ear-coverts mottled grayish. Length about 5.50–5.70, wing 4.30–4.50, tail 2.60–2.85, forked for .85–.95. *Hab.* Bahamas; accidental in Florida (Dry Tortugas)... [615.1.] **C. cyaneoviridis** BRYANT. **Bahaman Swallow.**[3]

GENUS **CLIVICOLA** FORSTER. (Page 458, pl. CXIV., fig. 4.)

Species.

Adult: Above dull grayish brown or brownish gray, darker on head and wings, paler on rump and upper tail-coverts; beneath white, interrupted by a broad band of brownish gray across chest, this continued along sides; usually, a more or less extensive spot of same in middle of breast. *Young:* Similar to adult, but wing-coverts, secondaries, upper tail-coverts, and feathers of rump more or less distinctly bordered with buffy or whitish. Length about 4.75–5.50, wing 3.70–4.25, tail 2.10–2.25. *Nest* in horizontal holes or burrows excavated in sand-banks, banks of streams, etc. *Eggs* 3–6, .70 × .49, pure white. *Hab.* Northern hemisphere in general; in America, south in winter to Cuba and Jamaica, and through Middle America to Brazil.............................. 616. **C. riparia** (LINN.). **Bank Swallow.**

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[1] *Petrochelidon albilinea* LAWR., Ann. Lyc. N. Y. viii. 1863, 2. *Tachycineta albilinea* LAWR., Mem. Bost. Soc. ii. 1874, 271.

[2] *Callichelidon* "BRYANT, MSS." BAIRD, Review Am. B. i. May, 1865, 303. Type, *Hirundo cyaneoviridis* BRYANT.

[3] *Hirundo cyaneoviridis* BRYANT, Pr. Bost. Soc. N. H. vii. 1859, 111.

GENUS **STELGIDOPTERYX** BAIRD. (Page 458, pl. CXIV., fig. 5.)

Species.

Adult: Above plain grayish brown, darker on wings and tail, the tertials usually margined with paler brownish gray; beneath plain brownish gray, the belly, anal region, and lower tail-coverts white. *Young:* Much like adult, but wing-coverts broadly tipped and tertials broadly margined with cinnamon, the plumage in general more or less tinged or suffused with this color. Length 5.00–5.75, wing 4.00–4.70, tail 2.05–2.35. *Nest* in holes, usually in banks (as in *Clivicola riparia*), but often in abutments of bridges, etc. *Eggs* 3–6, .72 × .51, plain pure white. *Hab.* United States (except extreme northern border, and New England except Connecticut), south, through Mexico, to Guatemala.
617. **S. serripennis** (AUD.). **Rough-winged Swallow.**

FAMILY **AMPELIDÆ.**—THE WAXWINGS, ETC. (Page 322.)

Genera.

*a*¹. Wings pointed (first or second quill longest), decidedly longer than the short, even tail; primaries apparently only nine, the first being excessively minute, nearly or quite concealed; of those normally developed, the first or second longest; rictal bristles obsolete; frontal feathers filling completely the nasal fossæ, and concealing the nostrils; *young* with lower parts streaked. (Subfamily *Ampelinæ*).. **Ampelis.** (Page 464.)

*a*². Wings much rounded, shorter than the rounded, emarginated or graduated tail; primaries obviously ten, the first always very evident; of the remainder, the third to fifth (actually, fourth to sixth) longest; rictal bristles very distinct; frontal feathers not encroaching on nasal fossæ; *young* not streaked beneath. (Subfamily *Ptilogonatinæ*.[1])

*b*¹. Bill narrow, the width of upper mandible at posterior extremity of nostrils decidedly less than length from nostril to tip; crest springing from centre of crown composed of narrow, somewhat recurved, feathers; *adult male* glossy black, with white on inner webs of quills; *adult female* dull brownish gray, with white edgings on wings.
Phainopepla. (Page 465.)

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[1] In reality a very distinct family (*Ptilogonatidæ*), peculiar to Mexico and Central America, and represented by several strongly characterized genera.

b^2. Bill broad, the width of upper mandible at posterior extremity of nostrils decidedly greater than length from nostril to tip; crest covering whole top of head, composed of broad, loose-webbed, blended feathers; *adult males* plumbeous, with black quills and tail, bright yellow under tail-coverts, and large white spaces on inner webs of tail-feathers; *adult females* like males, but plumbeous replaced by brownish or olive. *Ptiliogonys.*[1]

GENUS **AMPELIS** LINNÆUS. (Page 463, pl. CXIII., fig. 4.)

Species.

COMMON CHARACTERS.—Crown with a lengthened, pointed crest, of soft, blended feathers; plumage very soft, the feathers of head, neck, and body perfectly blended, the prevailing color a soft fawn-color of vinaceous grayish brown, changing to ashy on rump and upper tail-coverts; prevailing color of wings and tail slaty, the latter sharply tipped with yellow or red, preceded by blackish; frontal points, lores, streak through eye (running beneath crest, on occiput), and chin (sometimes throat also) velvety black; anterior portion of malar region white. *Young* much duller than adult, the lower parts streaked with brownish or dull grayish on a whitish ground. *Nest* in trees, bulky, constructed of small twigs, rootlets, etc., mixed and lined with feathers and other soft materials. *Eggs* 3–5, pale dull bluish or pale purplish gray, spotted and dotted with dark brown, black, and purplish.

a^1. Tail tipped with gamboge-yellow; tips of secondaries sometimes with horny appendages resembling red sealing-wax.

b^1. Larger (wing more than 4.25); lower tail-coverts, forehead, and cheeks deep cinnamon or cinnamon-rufous; flanks brownish gray; primary coverts and outer webs of secondaries tipped with white; outer webs of quills tipped with white or yellow; length about 7.40–8.75, wing 4.40–4.60, tail 2.75–2.90. *Eggs* .92 × .65. *Hab.* Northern portions of northern hemisphere; in America, south to northern border of United States in winter, breeding far northward (and in northern Rocky Mountains?).

618. **A. garrulus** LINN. **Bohemian Waxwing.**

b^2. Smaller (wing less than 4.00); lower tail-coverts white; forehead and cheeks same color as crest; flanks yellowish olive; wings entirely plain slate-gray (except the wax-like tips to secondaries, in some specimens); length 6.50–7.50, wing about 3.60–3.90, tail 2.30–2.60. *Eggs* .87–.61. *Hab.* Whole of temperate North America, south (in winter only?) to Guatemala and West Indies.

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[1] *Ptiliogonys* SWAINS., Philos. Mag. n. s., i. 1827, 368. Type, *P. cinereus* SWAINS.

The male of the single Mexican species (*P. cinereus*) is uniform plumbeous, becoming ashy on head, which fades to nearly white anteriorly; flanks bright golden olive, or oil-yellow, the under tail-coverts rich gamboge-yellow; eyelids white; ear-coverts and occiput (beneath crest) soft grayish brown. The female is grayish brown where the male is plumbeous, the flanks wholly light brown, the wings and tail duller black, white spots on inner webs of tail-feathers more restricted, etc. An allied Guatemalan race (*P. cinereus molybdophanes*, new subspecies) differs in having the plumbeous decidedly deeper, the flanks olive-green instead of oil-yellow, etc. The dimensions are nearly the same (length about 7.75–8.00, wing 3.70, tail 4.00–4.25). A very fine Costa Rican species (*P. caudatus* CAB.), with long and much graduated tail but very similar plumage, is the type of the subgenus *Sphenotelus* BAIRD (Rev. Am. B. i. May, 1866, 412).

619. **A. cedrorum** (Vieill.). **Cedar Waxwing.**

a^2. Tail tipped with rose-red; tips of secondaries never with sealing-wax-like tips. Greater wing-coverts dull red; otherwise much like *A. garrulus*, but without yellow tips to quills, but these, as also sometimes the secondaries, usually tipped with rose-red. *Hab.* Japan.

A. japonicus (Sieb.). **Japanese Waxwing.**[1]

Genus PHAINOPEPLA Sclater. (Page 463, pl. CXIII., fig. 2.)

Species.

Adult male: Uniform glossy blue-black, the inner webs of quills chiefly white; *in winter*, many feathers bordered with whitish. *Adult female:* Plain brownish gray, rather paler below, the wing-coverts, secondaries, and lower tail-coverts margined with white; white on inner webs of primaries more restricted and less sharply defined than in male. *Young:* Similar to adult female. Length 7.00–7.75, wing 3.60–3.80, tail 3.80–4.10. *Nest* saucer-shaped, compact, of plant-fibres, etc., on small trees. *Eggs* 2–3, .87 × .63, light grayish or dull grayish white, thickly speckled with neutral tint, dark brown, and blackish. *Hab.* Arid region of Mexico, and contiguous portions of United States, from western Texas to southern California... 620. **P. nitens** (Swains.). **Phainopepla.**

Family LANIIDÆ.—The Shrikes. (Page 323.)

Genera.

(Characters same as those given for the Family)....... **Lanius.** (Page 465.)

Genus LANIUS Linnæus. (Page 465, pl. CXIII., fig. 3.)

Species.

Common Characters.—*Adults* plain gray above, the sides of the head, wings, and tail black; the wings with a white patch at base of quills and tail, with much white on exterior feathers and tips of others; lower parts whitish. *Young* essentially similar to adults, but colors less strongly contrasted, the gray and white more or less tinged with brownish, and more or less vermiculated, or "waved," with narrow dusky bars; wing-coverts tipped with dull light buffy. *Nest* a very bulky structure, composed of sticks, dried grass-stems, wool, feathers, etc., placed in small (usually thorny) trees or hedges. *Eggs* 4–7, dull whitish, spotted with light brown or olive.

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[1] *Bombicyvora japonica* Siebold, Hist. Nat. Jap. Stat. 1824, No. 2. *Ampelis japonica* Gray, Gen. B. i. 1846, 278.

a[1]. Inner webs of secondaries dusky next to shaft for much the greater part of their length; tail-feathers (except sometimes middle pair) white at base; bill from nostril not more than .55.

b[1]. Wing 4.35, or more; lores never wholly deep black; nasal tufts always whitish or grayish on top; basal half of lower mandible light-colored, except in summer adults.

c[1]. A more or less distinct whitish spot on lower eyelid; adult (and young) with breast distinctly undulated, or narrowly barred with grayish. *Summer adult:* Above pale ash-gray, becoming white or grayish white on forehead, superciliary region, hinder scapulars, lower rump, and upper tail-coverts; lores chiefly blackish gray, but black anteriorly and immediately next to eye; beneath white, the breast and anterior portion of sides narrowly barred or undulated with grayish. *Winter adult:* Similar, but basal half of lower mandible light brownish (horn-grayish in life), and lores chiefly light grayish (sometimes even mixed with whitish). *Young in first winter:* Above dull grayish brown, sometimes tinged with light umber-brown; wings and tail much duller black; greater wing-coverts tipped (sometimes also narrowly edged) with pale brownish buffy; white at base of quills indistinct (sometimes obsolete); ear-coverts dusky brownish; lower parts brownish white, more strongly tinged with brown laterally, everywhere (except on chin and under tail-coverts) very distinctly waved or narrowly barred with dusky grayish. *Young:* Essentially like preceding, but hinder scapulars, rump, and upper tail-coverts more or less distinctly undulated with dusky, the greater wing-coverts, secondaries, and middle tail-feathers tipped with pale rusty, and anterior lower parts (including whole breast and anterior portion of sides) nearly uniform pale grayish brown, the darker undulations appearing only on close inspection. Length 9.25–10.75, wing 4.35–4.60, tail 4.50–4.70, bill from nostril .50–.55, tarsus 1.02–1.05. *Eggs* 1.05 × .76. *Hab.* Northern North America; south, in winter, to Potomac and Ohio Valleys, Kansas, Colorado, Nevada, northern California, and even Arizona.................... 621. **L. borealis** VIEILL. **Northern Shrike.**

c[2]. No trace (?) of white on lower eyelid; adult without grayish undulations or bars on breast or other lower parts; otherwise not obviously different from *L. borealis;* wing 4.35–4.50, tail 4.30–4.60, bill from nostril .52–.55, tarsus 1.00–1.10. *Hab.* Northern Asia and northern and eastern Europe.

L. borealis sibiricus BOGD. **Siberian Shrike.**[1]

b[2]. Wing less than 4.25; lores and nasal tufts always wholly black in adult;

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[1] *Lanius borealis sibiricus* BOGDANOW, "Russian Shrikes, etc., p. 102, 1881." (GADOW.) *L. major* PALL. *et* AUCT., *nec* WILKES.

Said to have been procured at Chilcat, Alaska (*cf.* SCHALOW, Auk, i. 1884, 292), but the correct identification perhaps open to doubt.

basal half of lower mandible never light-colored, except in young. (*Adults* above ash-gray or slate-gray (varying much in shade), the scapulars, lower rump, and upper tail-coverts usually paler, sometimes nearly white; lower parts white, sometimes tinged with grayish laterally, usually not undulated or otherwise marked.)

c^1. *Adults* pure white beneath, rarely much tinged laterally with grayish, and very rarely with obvious grayish undulations or bars on breast; gray of upper parts of a pure ash- or slate-gray cast.

d^1. Darker, the upper tail-coverts usually not distinctly paler than rump, and never (?) whitish; sides usually faintly tinged with gray; wing, tail, and tarsus averaging shorter, and bill larger; length 8.50–9.50, wing 3.75–4.00 (3.83), tail 3.65–4.25 (3.97), bill from nostril .43–.50 (.47), depth of bill at base .34–.38 (.35), tarsus 1.00–1.10 (1.05). *Eggs* .97 × .73. *Hab.* More southern portions of eastern United States, but north, irregularly, to Ohio, Vermont, etc., regularly to Virginia and southern Illinois.
622. **L. ludovicianus** LINN. **Loggerhead Shrike.**

d^2. Paler, the upper tail-coverts usually more or less distinctly whitish, the scapulars more extensively white, the sides usually very faintly, if at all, tinged with gray; wings, tail, and tarsus averaging longer and bill smaller; length 8.00–10.00, wing 3.75–4.10 (3.94), tail 3.75–4.30 (4.06), bill from nostril .42–.50 (.46), depth at base .30–.35 (.32), tarsus 1.00–1.15 (1.09). *Eggs* .97 × .72. *Hab.* Central region of North America, north to the Saskatchewan, south over table-lands of Mexico, west to Lower California, Arizona, Nevada, etc., east across Great Plains, and, sporadically, through basin of the Great Lakes to northern New York.... 622*a*. **L. ludovicianus excubitorides** (SWAINS.). **White-rumped Shrike.**

c^2. *Adults* dull white or grayish white beneath, strongly gray laterally, the breast usually distinctly undulated or narrowly barred with grayish, under parts sometimes strongly tinged with pale brown or dull vinaceous; gray of upper parts having a more or less decided brownish, or less bluish, cast.

About as dark above as *L. ludovicianus* (sometimes darker, especially on head), the upper tail-coverts, however, sometimes abruptly light grayish, or even whitish, as in *L. excubitorides;* tail averaging longer than in either of the more eastern forms, the average length of wing intermediate; length 8.00–10.00, wing 3.70–4.00 (3.89), tail 3.75–4.50 (4.11), bill from nostril .43–.48 (.46), depth at base .30–.35 (.33), tarsus 1.05–1.15 (1.09). *Hab.* California, especially coast district.
622*b*. **L. ludovicianus gambeli** RIDGW. **California Shrike.**[1]

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[1] New subspecies. It is with extreme reluctance that I have concluded to name, and attempt to characterize, a third race of this species, yet I have felt compelled to do so, or else drop *L. excubitorides*. Typical exam-

a^2. Inner webs of secondaries white quite to the shaft for about the basal half, the white then abruptly narrowed to less than half the width of inner web, but very abruptly defined against the dusky; tail-feathers without any white at base; bill from nostril .60.

Adult: Above very dark slate-gray, including upper tail-coverts, darker on head, where not becoming lighter next to black of lores and frontlet, the longer scapulars, however, passing terminally or exteriorly into whitish; lower parts bluish gray, becoming white along median line, including whole chin and throat and under tail-coverts; length (mounted specimen) about 8.75, wing 4.20, tail 4.40, exposed culmen 1.00, bill from nostril .60, depth at base .39, tarsus 1.20. *Hab.* Said to be California, but possibly some portion of the Old World.

L. robustus (BAIRD). **Baird's Shrike.**[1]

FAMILY **VIREONIDÆ.**—THE VIREOS. (Page 323.)

Genera.

a^1. Lateral toes very unequal in length, the inner one, with its claw, not reaching beyond base of middle claw; legs and feet weaker.

b^1. Wing shorter than tail, extremely rounded, the fifth or sixth quill longest, and second shorter than secondaries; tail much rounded, the difference between longest and shortest feathers nearly equal to length of bill from nostril; bill weaker, relatively broader and more depressed at base. (The single known species with whole top of head and hind-neck, wings, and tail bright olive-green; back, scapulars, rump, throat, breast, sides, and flanks uniform slate-gray; chin and belly white; wing about 2.30.) .... *Neochloe.*[2]

b^2. Wing equal to or longer than tail, less rounded, the third or fourth quill longest, and second much longer than secondaries; tail nearly even, or, if rounded, the difference between longest and shortest feathers much less than length of bill from nostril; bill stouter, and relatively narrower and higher at base. (Coloration very variable, but never at all resembling *Neochloe.*) .... **Vireo.** (Page 469.)

a^2. Lateral toes nearly equal in length, the inner one, with its claw, reaching decidedly beyond base of middle claw; legs and feet stouter.

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ples of the Californian bird certainly cannot be matched by specimens from any portion of the country east of the Sierra Nevada, while there is not more of individual variation than exists in the other two forms. The resemblance is, on the whole, closer to the darker-colored specimens of true *L. ludovicianus* (from the Gulf States), but the under parts are constantly much darker, and, in seventeen of the twenty-one specimens now before me, very perceptibly (sometimes distinctly) undulated on the breast with grayish, this character being very exceptional in *L. ludovicianus* and still more rarely observable in *L. excubitorides.*

[1] *Lanius ludovicianus*, var. *robustus* BAIRD, Am. Nat. vii. 1873, 608. *Lanius robustus* GADOW, Cat. B. Brit. Mus. viii. 1883, 243. (See especially the important paper by Leonhard Stejneger in Proc. Philad. Acad. 1885, pp. 91–96.)

[2] *Neochloe* SCLATER, P. Z. S. 1857, 213. Type, *N. brevipennis* SCL. (*Hab.* State of Vera Cruz, Mexico.)

b^1. Smaller (wing less than 2.50); bill small, nearly as broad as high at base, and tapering rapidly to the slender, slightly hooked tip. (Color olive-green or russet-olive above, with top of head and neck ash-gray or else with tail russet; lower parts neither yellow nor green.)
Hylophilus. (Page 478.)

b^2. Larger (wing not less than 3.00); bill stout, much deeper than wide at base, the culmen curving rather abruptly toward the strongly hooked tip.

c^1. Depth of bill at base only about half the exposed culmen. (Lower parts green, becoming yellow on throat, or else white with rufous band across chest; upper parts bright green, with top of head sky-blue, or else olive, the sides of head striped with yellow, slate-color, white, and black.) .... *Vireolanius.*[1]

c^2. Depth of bill at base much more than half the exposed culmen. (Lower parts yellow; upper parts plain olive-green, becoming ash-gray on head and neck, the forehead and broad superciliary stripe rufous.)
Cyclorhis.[2]

GENUS **VIREO** VIEILLOT. (Page 468, pl. CXV., figs. 1–3, 5.)

Species.

COMMON CHARACTERS.—Above plain olive-green or olive-grayish, with or without white wing-bands; beneath whitish or yellowish, or both. *Nest* a very beautiful basket-shaped structure suspended from a forked twig, composed of mosses, lichens, fine strips of bark, etc. *Eggs* white, usually more or less dotted or sparsely speckled round larger end with brown and blackish.

a^1. Spurious primary, if present, very narrow and pointed, and decidedly shorter than tarsus.

b^1. Wing without light bands or other distinct markings. (Subgenus *Vireosylva* BONAP.)

c^1. Without any spurious primary, or else, if present, the exposed culmen .50, or more.[3]

d^1. Exposed culmen .50, or more; middle of chest white.

e^1. A distinct dusky streak along each side of throat.

Above plain dull olive-greenish, becoming gray on top of head, which has a more or less distinct dusky streak along each side of crown; a conspicuous superciliary stripe of dull whitish, bordered below by a distinct dusky streak through the eye; cheeks dull grayish white or pale brownish gray (whole side of head, including superciliary stripe, sometimes strongly suffused with dull brownish buffy); lower parts white, tinged with olive laterally, the axillars and under tail-coverts yellowish white, or very pale sulphur-yellow. Length about 5.50–5.75, wing 3.00–3.25, tail 2.20–2.50, exposed culmen .57–.65. *Eggs* .78 × .58. *Hab.* Cuba, Bahamas, and southern Florida.

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[1] *Vireolanius* BONAP., Consp. i. 1850, 330. Type, *V. melitophrys* DU BUS.

[2] *Cyclorhis* SWAINS., Zool. Jour. iii. 1828, 162. Type, *Tanagra guianensis* GMEL.

[3] The exception is *V. olivaceus*, which is said to have *sometimes* (but very rarely) a spurious primary.

623. **V. altiloquus barbatulus** (Cab.). **Black-whiskered Vireo.**

e^2. No trace of dusky streak along side of throat.

f^1. Top of head dull ash-gray, margined along each side by a dusky streak; rest of upper parts olive-greenish.

g^1. Sides and flanks tinged with grayish olive; axillars and under tail-coverts white, or very faintly tinged with sulphur-yellow; length 5.50–6.50, wing about 3.10–3.30, tail 2.15–2.30, exposed culmen .50–.55. *Nest* usually in small trees, in woods, usually less than ten feet from ground. *Eggs* .81 × .56. *Hab.* Eastern North America, north to Hudson's Bay, etc., west to Rocky Mountains or beyond; in winter, south through eastern Mexico and Central America to northern South America.

624. **V. olivaceus** (Linn.). **Red-eyed Vireo.**

g^2. Sides and flanks bright olive-yellow; axillars and under tail-coverts clear sulphur-yellow; length about 6.25–6.75, wing 2.80–3.20, tail 2.05–2.50, exposed culmen .55–.60. *Hab.* Mexico and Central America, north to Lower Rio Grande Valley, in Texas (accidentally to Godbout, Province of Quebec), south to Ecuador and upper Amazon.

625. **V. flavoviridis** (Cass.).
(78.) **Yellow-green Vireo.**

f^2. Top of head dull brownish gray or grayish brown, like the back and other upper parts.

g^1. Above dull brownish gray; wing 2.90–3.00, tail 2.35, exposed culmen .60–.65. *Hab.* Island of Cozumel, Yucatan.

V. cinereus Ridgw. **Cozumel Vireo.**[1]

g^2. Above dull brownish olive; lower parts duller white medially, deeper olivaceous laterally; wing 3.05, tail 2.40, exposed culmen .65. *Hab.* Coast of British Honduras.

V. magister Baird. **Belize Vireo.**[2]

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[1] *Vireosylvia cinerea* Ridgw., Descr. N. B. Cozumel, 1885, 2. *Vireo cinereus* Ridgw., Proc. U. S. Nat. Mus. viii. 1885, 565.

[2] *Vireosylvia magister* "Baird, n. s." Lawr., Ann. Lyc. N. Y. x. 1871, 20. *Vireo magister* Salv. & Godm., Biol. Centr.-Am., Aves, i. 1881, 191.

d^2. Exposed culmen not more than .40.

Above grayish olive-green, becoming more decidedly grayish on top of head; a whitish superciliary stripe; lower parts very pale sulphur-yellow, deepest on chest, the chin and belly white; length about 4.80, wing 2.50–2.75, tail 1.90–2.20, exposed culmen .38–.40. *Hab.* Eastern North America, north to Manitoba and Hudson's Bay (breeding chiefly north of United States); south, in winter, to Guatemala, Costa Rica, and Chiriqui (but not yet recorded either from Mexico or from any part of West Indies).

626. **V. philadelphicus** (CASS.). **Philadelphia Vireo.**

c^2. Wing with a well-developed spurious primary, longer than bill; exposed culmen much less than .50.

d^1. Top of head dull ash-gray, not distinctly different from the grayish olive, or olive-gray, of back. (*Adult:* Above olive-grayish, becoming more decidedly gray on top of head, more tinged with pale olive-greenish on rump and upper tail-coverts; a whitish loral streak, extending back over eye, but scarcely beyond it; malar region, ear-coverts, and sides of neck pale brownish gray or pale grayish buffy; lower parts dull white, more or less tinged with olive-yellowish laterally. *Young:* Top of head and hind-neck very pale grayish buff, the lores and superciliary region white; ear-coverts still paler buffy; back, scapulars, rump, and lesser wing-coverts buffy grayish; lower parts entirely pure white, except under tail-coverts, which are pale yellow; wings and tail as in adult, but greater wing-coverts tipped with dull grayish buffy.)

e^1. Larger, with stouter bill; upper parts (especially top of head) averaging rather paler and clearer grayish, the flanks more yellowish (or less olivaceous), the colors generally clearer or "cleaner"; length 5.00–5.50, wing 2.65–2.95 (2.84), tail 2.10–2.40 (2.22), bill from nostril .30–.32 (.31), depth at base .15–.18 (.16), tarsus .68–.72 (.70). *Nest* in trees, usually at a considerable height, in open copses, along banks of streams, or in shade-trees along streets in towns and cities. *Eggs* .75 × .55. *Hab.* Eastern North America, north to Fort Simpson and Hudson's Bay, west to Great Plains; south, in winter, to eastern Mexico.

627. **V. gilvus** (VIEILL.). **Warbling Vireo.**

e^2. Smaller, with slenderer bill; upper parts (especially top of head) averaging rather darker and duller grayish, flanks more olivaceous, the colors generally less clear; length 4.75–5.40, wing 2.55–2.85 (2.69), tail 2.00–2.30 (2.14), bill from nostril .29–.31 (.30), depth at base .15–.16 (.15), tarsus .65–.70 (.68). *Nest* as in *V. gilvus.* *Eggs* .73 × .51. *Hab.*

Western United States, east to Rocky Mountains; south through central and western Mexico in winter.

—. **V. gilvus swainsoni** (Baird). **Western Warbling Vireo.**[1]

*b*². Wing with two distinct white bands across tips of middle and greater coverts. (Subgenus *Lanivireo* Baird.)

*c*¹. No spurious primary; loral streak, orbital ring, chin, throat, and breast yellow; top of head olive-green.

Posterior under parts white; rump, upper tail-coverts, and scapulars ash-gray; hind-neck and back olive-green; tertials broadly edged with white; length 5.00–5.85, wing 3.00–3.20, tail 2.00–2.30. *Nest* in woods, usually at a considerable height from ground. *Eggs* .79 × .58, usually more heavily spotted than in other species. *Hab.* Eastern United States, west to edge of Great Plains; south, in winter, to Costa Rica.

628. **V. flavifrons** Vieill. **Yellow-throated Vireo.**

*c*². A more or less distinct spurious primary; loral streak, orbital ring, chin, throat, etc., white; top of head ash-gray or plumbeous (more brownish in winter).

*d*¹. Spurious quill minute (much shorter than exposed culmen); hind-part and sides of neck olive-green, like back and scapulars; chest and breast (especially sides of the latter) strongly washed with sulphur-yellow. (Otherwise much like *V. solitarius.*) Wing 3.05, tail 2.20, bill from nostril .30, tarsus .72. *Hab.* Highlands of Guatemala (Coban, Vera Paz).

V. propinquus (Baird). **Vera Paz Vireo.**[2]

*d*². Spurious quill well developed (much longer than exposed culmen); hind-part and sides of neck grayish, like top of head and ear-coverts; chest and breast without yellow tinge.

*e*¹. Sides and flanks conspicuously olive or olive-green, distinctly tinged with yellow; back, rump, and upper tail-coverts olive-green. (Young in first winter with anterior upper parts dull grayish brown, the lower parts dull buffy white, the general aspect quite different from full adult plumage.)

*f*¹. Smaller (wing not more than 3.00, tail rarely more than 2.20).

*g*¹. Back, etc., brighter olive-green, more abruptly contrasted with plumbeous-gray of head and neck, the latter deeper and clearer; gray of cheeks more abruptly contrasted with white of throat; sides and flanks usually more strongly tinged with olive-green and yellow; length 5.00–6.00, wing 2.90–3.00 (2.94), tail 2.10–2.20 (2.19), bill from nostril .28–.30 (.29), tarsus .70–.73 (.71). *Nest* in woods, in undergrowth or lower branches of small trees. *Eggs* .79 × .57. *Hab.* Eastern North America, north to Fort Simpson and Hudson's Bay, breeding chiefly north of United States; south, in winter, through eastern Mexico to Guatemala.

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[1] *Vireo swainsoni* Baird, B. N. Am. 1858, 336 (in text). *Vireo gilvus*, var. *swainsoni* Coues, Key, 1872, 121.

[2] *Vireosylvia propinqua* Baird, Review Am. B. i. May, 1866, 348.

This is either a very distinct species or else, as suggested by Messrs. Salvin & Godman (*Biol. Centr.-Am., Aves*, i. p. 197) a hybrid between *V. solitarius* and *V. flavifrons.*

629. **V. solitarius** (Wils.). **Blue-headed Vireo.**

*g*². Back, etc., more grayish olive-green, less abruptly (if at all) contrasted with the duller ash-gray of head and neck; gray of cheeks less abruptly contrasted with white of throat; sides and flanks less strongly tinged with olive-green and yellow. (Young in first winter much browner than corresponding stage of *V. solitarius.*) Length 5.00–5.60, wing 2.85–3.00 (2.90), tail 2.10–2.30 (2.16), bill from nostril .28–.31 (.30), tarsus .70–.78 (.74). *Eggs* .79 × .55. *Hab.* Western United States, east to Rocky Mountains, but chiefly (if not exclusively) Pacific coast in summer; in winter, south through western Mexico..... 629*a*. **V. solitarius cassinii** (Xantus). **Cassin's Vireo.** (79.)

*f*². Larger (wing decidedly more than 3.00, tail not less than 2.20).

Similar in plumage to *V. solitarius*, but upper parts much darker ("nearly uniform blackish plumbeous, with only a faint tinge of greenish on the back, which is essentially concolor with the crown"); wing 3.03–3.30, tail 2.21–2.31, bill from nostril .30–.36, tarsus .72–.75. *Hab.* Higher southern Alleghanies (western North Carolina, etc.).......... 629*c*. **V. solitarius alticola** Brewst. **Mountain Solitary Vireo.**[1]

*e*². Sides and flanks tinged with plumbeous-gray, but with little if any olivaceous or yellowish tinge; back, rump, and upper tail-coverts plumbeous-gray, very slightly, if at all, tinged with olive-green.

Above plumbeous, or plumbeous-gray, with the usual white markings on wings and sides of head; lower parts white, the sides and flanks strongly tinged with plumbeous-gray; length 5.75–6.15, wing 3.05–3.30

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[1] *Vireo solitarius alticola* Brewst., Auk, iii. Jan. 1866, 111.

(3.16), tail 2.30–2.55 (2.41), bill from nostril .30–.35 (.31), tarsus .72–.79 (.75). *Eggs* .79 × .59. *Hab.* Rocky Mountain district of United States; south, in winter, through central Mexico.... 629*b*. **V. solitarius plumbeus** (Coues). **Plumbeous Vireo.**

*a*². Spurious primary always present and well developed, equal to or longer than tarsus, and broad, like other quills; wing more rounded. (Subgenus *Vireo*.)

*b*¹. Wing much longer than tail (the difference equal to or greater than length of bill from nostril).

*c*¹. Sides olivaceous or yellowish.

*d*¹. Median lower parts pure white or buffy white, in marked contrast with olive-greenish or yellowish of sides and flanks.

*e*¹. Wings blackish or dusky, the middle and greater coverts broadly and sharply tipped with white or pale sulphur-yellow.

*f*¹. Lores and orbital ring white; cheeks and ear-coverts black or deep brownish gray, in marked contrast with pure white or buffy white of throat.

Adult male: Top and sides of head deep black, the lores and orbital ring pure white; lower parts pure white, the sides and flanks olive-greenish, tinged with yellow; upper parts olive-green, the wings and tail black, with pale olive-yellow edgings. *Adult female* similar to male, but black of head usually duller, more slate-colored. *Young in first autumn and winter:* Top and sides of head dull grayish brown; lores, orbital ring, and lower parts dull buffy white, or pale dull buffy, the sides brown-olive; upper parts more brownish than in adult. Length 4.40–4.75, wing 2.15–2.30, tail 1.80–2.00. *Nest* 3–5 feet from ground, in bushes or small trees. *Eggs* usually 4, .72 × .51, plain white. *Hab.* Southern portion of Great Plains, north to Kansas; in winter, south into Mexico (Mazatlan, etc.)...... 630. **V. atricapillus** Woodh. **Black-capped Vireo.**

*f*². Lores and orbital ring yellow; cheeks and ear-coverts grayish, fading gradually into grayish white of throat. (Above olive-green, usually tinged, more or less, with ashy on hind-neck; wings and tail dusky, with light olive-green edgings; chin, throat, and chest grayish white; belly and under tail-coverts pure white, the latter usually faintly tinged with sulphur-yellow; sides and flanks sulphur-yellow, tinged with olive.

Young: Above plain olive-gray, becoming more olivaceous posteriorly; middle and greater wing-coverts broadly tipped with pale buff, tertials broadly edged with yellowish white, secondaries narrowly edged with olive-yellowish, and primaries with pale grayish or grayish white; lower parts white, passing into very pale buffy yellow on flanks and under tail-coverts; head-markings as in adult, but supraloral streak white, passing into pale yellowish over eye, and lores dull grayish.)

*g*¹. Smaller and brighter colored, the supraloral streak, etc., deeper yellow, the sides and flanks bright sulphur-yellow; length 4.50–5.00, wing 2.35–2.50, tail 1.90–2.10, culmen (from base) .55–.58, bill from nostril .27–.30, tarsus .72–.78. *Nest* in bushes, in thickets or along borders of woods or swamps. *Eggs* .75 × .55. *Hab.* Eastern United States, west to Rocky Mountains; south, in winter, through eastern Mexico to Guatemala; resident in Bermudas .. 631. **V. noveboracensis** (GMEL.).
White-eyed Vireo.

*g*². Larger and duller colored, the yellow everywhere paler, that on sides and flanks sometimes a mere tinge of pale sulphur-yellow; length about 5.00, wing 2.35–2.50, tail 2.10–2.20, culmen (from base) .60–.65, bill from nostril .32–.35, tarsus .78–.82. *Hab.* Key West, Florida.
631*a*. **V. noveboracensis maynardi** BREWST.
Key West Vireo.[1]

*e*². Wings dull dusky grayish, the middle and greater coverts narrowly and not very sharply tipped with dull white.

Top of head and hind-neck dull brownish gray, gradually changing to grayish olive-green on back, scapulars, rump, and upper tail-coverts; a rather indistinct loral streak and interrupted orbital ring, dull white; cheeks and ear-coverts light brownish gray, fading gradually into dull white or buffy white of throat; median lower parts white, the breast usually faintly tinged with sulphur-yellow; sides and flanks sulphur-yellow, tinged with olive; under tail-coverts and under wing-coverts clear pale sulphur-yellow; length 4.20–5.25, wing 2.05–2.30 (2.18), tail 1.80–1.95 (1.88), bill from nostril .28–.30 (.29), tarsus .70–.75 (.72). *Nest* in

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[1] *Vireo noveboracensis maynardi* BREWST., MS.

bushes, in thickets. *Eggs* .68 × .48. *Hab.* Great Plains, and prairie districts of Mississippi Valley, north to Wyoming, Dakota, and Minnesota, east across Illinois; south, in winter, to southern Mexico.
633. **V. bellii** Aud. **Bell's Vireo.**

*d*². Median lower parts same color as sides and flanks, only (usually) paler.

*e*¹. Lores and orbital ring yellow.

*f*¹. Larger (wing 2.40, or more). (Length about 5.00, wing 2.40–2.60, exposed culmen .45–.52.)

*g*¹. Beneath dull whitish, tinged with olive-yellowish; above grayish olive, varying to dull olive-gray. *Hab.* Bahamas (New Providence, Abaco, Green Cay, Cat Island, and Eleuthera Island).
V. crassirostris (Bryant). **Large-billed Vireo.**[1]

*g*². Beneath deep sulphur-yellow or "King's yellow;" above olive-green. *Hab.* Bahamas (Concepcion Island, Cat Island, Green Cay, Rum Cay, and Galding Key, Andros Island).
V. crassirostris flavescens Ridgw. **Yellow Vireo.**[2]

*f*². Smaller (wing not more than 2.25).

In coloration intermediate between *V. crassirostris* and *V. crassirostris flavescens;* wing 2.10–2.25, tail 1.85–2.00, exposed culmen .40–.45. *Hab.* Southern Mexico, Honduras, and Guatemala; north to Yucatan and Mazatlan.
V. ochraceus Salv. **Ochraceous Vireo.**[3]

*e*². Lores and orbital ring dull whitish, the latter interrupted on upper eyelid. (Above plain olive or olive-grayish, becoming more decidedly olivaceous on rump, upper tail-coverts, and edges of secondaries and tail-feathers; middle and greater wing-coverts broadly tipped with white, producing two very conspicuous bands across wing; lower parts dull olive-whitish, the sides and flanks more decidedly, but never conspicuously, tinged with olive.)

*f*¹. Darker colored, with shorter wing and tail and, usually, stouter bill; above decidedly olive, becoming more greenish posteriorly; beneath decidedly tinged laterally with olive-yellow; wing-bands narrow, tinged with olive-yellow; length 4.25–4.75, wing 2.40–2.45 (2.43), tail 2.00–2.10 (2.06), bill from nostril .26–.29 (.28), tarsus .72–.76 (.75). *Hab.* California (resident).

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[1] *Lanivireo crassirostris* Bryant, Proc. Bost. Soc. N. H. vii. 1859, 112. *Vireo crassirostris* Baird, Review Am. B. i. 1866, 368.

[2] New subspecies. Although occurring together with true *V. crassirostris* on several islands, this form occurs exclusively on Rum Cay and Concepcion Island, while only the true *V. crassirostris* is found on Abaco and New Providence. The separation is based upon a very extensive collection (about 75 specimens), embracing large series from several of the islands above named.

[3] *Vireo ochraceus* Salv., P. Z. S. 1863, 188.

(80.) 632. **V. huttoni** Cass. **Hutton's Vireo.**

*f*². Paler and grayer, with longer wings and tail and (usually) more slender bill; above olive-gray, tinged with olive-green posteriorly; beneath very faintly tinged laterally with olive-yellowish; wing-bands broader, pure white; length 4.90–5.20, wing 2.50–2.65 (2.58), tail 2.10–2.20 (2.16), bill from nostril .25–.30 (.28), tarsus .70–.75 (.72). *Hab.* Mexico, western Texas, New Mexico, Arizona, and Lower California.

632*a*. **V. huttoni stephensi** Brewst. **Stephens's Vireo.**

*c*². Sides (from ear-coverts to flanks, inclusive) light tawny.

Above light brown, becoming more tawny on forehead, the secondaries, primaries, and tail-feathers edged with pale olive; two bands across wing, and edges of tertials, white; lores, orbits, and median lower parts white; wing about 2.50, tail about 2.15. *Hab.* Island of Cozumel, Yucatan.

V. bairdi Ridgw. **Baird's Vireo.**[1]

*b*². Wing not much longer than tail (the difference less than length of exposed culmen).

*c*¹. Lower parts white (usually more or less tinged with grayish or olive laterally).

*d*¹. Wing less than 2.50, tail less than 2.25.

*e*¹. Middle wing-coverts not distinctly, if at all, tipped with white; bill from nostril less than .30.

Above plain gray, more or less tinged with olive-greenish posteriorly (sometimes on back also); greater wing-coverts (sometimes middle coverts also) narrowly, and not very distinctly or abruptly, tipped with white; a rather indistinct supraloral streak and orbital ring grayish white, the lower portion of lores (from bill to eye) grayish or dusky; lower parts white, the sides and flanks tinged, more or less strongly, with olive-grayish and pale yellow; length 4.80–5.25, wing 2.10–2.30 (2.17), tail 2.03–2.20 (2.09), bill from nostril .25–.29 (.27), tarsus .70–.80 (.72). *Nest* in bushes, in thickets. *Eggs* .67 × .48. *Hab.* Southern and central

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[1] *Vireo bairdi* Ridgw., Descr. New Sp. B. Cozumel, Feb. 26, 1885, 2; Proc. U. S. Nat. Mus. viii. 1885, 565.

California (north through Sacramento Valley), Lower California, and Arizona.

633*a*. **V. pusillus** Coues. **Least Vireo.**[1]

*e*². Middle wing-coverts distinctly tipped with white, like greater coverts; bill from nostril more than .30.

Colors as in *V. pusillus*, except as described above; wing 2.20–2.30, tail 1.90–2.00, bill from nostril .33, exposed culmen .48, tarsus .78. *Hab.* West coast of Nicaragua and Costa Rica.

V. pallens Salv. **Pale Vireo.**[2]

*d*². Wing 2.50, or more, tail 2.40, or more.

Colors as in *V. pusillus*, but lores entirely grayish white, and band across tips of greater wing-coverts less distinct (sometimes obsolete), the middle coverts never tipped with white; length about 5.60–5.75, wing 2.50–2.60, tail 2.40–2.55, tarsus .70–.78. *Nest* in thorny bushes. *Eggs* .73 × .56. *Hab.* Southern California, Arizona, New Mexico, western Texas, and northwestern Mexico.

634. **V. vicinior** Coues. **Gray Vireo.**

*c*². Lower parts yellow.

*d*¹. Above dull grayish olive, the wings with two very narrow whitish or pale yellowish bands; lores, orbital ring, and lower parts pale yellow, becoming distinctly olive-gray on sides; wing 2.15–2.30, tail 2.20–2.30, tarsus .80–.90. *Hab.* Cuba.

V. gundlachi Lemb. **Cuban Vireo.**

*d*². Above bright yellowish olive-green; wings without trace of light bands; superciliary stripe and lower parts bright yellow, the sides tinged with olive; length about 5.50, wing 2.55–2.65, tail 2.40–2.60. *Hab.* Southwestern Mexico (Oaxaca to Tres Marias).

V. hypochryseus Scl. **Yellow Vireo.**[4]

Genus **HYLOPHILUS** Temminck.[5] (Page 469, pl. CXV., fig. 4.)

Species.

Common Characters.—Above mostly or partly plain olive or olive-green, the head more or less different in color from other portions; beneath plain light olive or olive-greenish, the throat (in one species whole of median lower parts) dull whitish.

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[1] Unquestionably a good species, which should stand as *V. pusillus* Coues. In a series of 22 specimens at this moment before me, including 11 from Arizona (embracing several so-called "intermediate" examples), there is not the slightest suggestion of intergradation with *V. bellii.*

[2] *Vireo pallens* Salv., P. Z. S. 1863, 188.

[3] *Vireo gundlachi* Lembeye, Aves de la Cuba, 1850, 29, pl. 5, fig. 1.

[4] *Vireo hypochryseus* Scl., P. Z. S. 1862, 390, pl. 46.

[5] *Hylophilus* Temm., Pl. Col. iii. Livr. 29, 1823, text, and pl. 173, fig. 1. Type, *H. thoracicus* Temm.

a[1]. Top of head and hind-neck ash-gray; rest of upper parts uniform olive-green; lower parts dull whitish, the sides and flanks olive-green, and under tail-coverts pale yellow; length (skins) about 3.75–4.00, wing 2.00–2.20, tail 1.55–1.70. *Hab.* Eastern Mexico and Guatemala, north to southern Texas (?).

H. decurtatus (Bonap.). **Short-winged Hylophilus.**[1]

a[2]. Top of head tawny, brighter or more ochraceous on forehead; rest of upper parts olive-tawny, mixed with olive on rump, the tail deep tawny brown; chin and throat light grayish; rest of lower parts pale yellowish olive, sometimes tinged with tawny on breast; length (skins) about 4.00, wing 2.15–2.25, tail 1.80–1.90. *Hab.* Southern Mexico (Oaxaca, etc.) and south to Costa Rica.

H. ochraceiceps Scl. **Ochraceous-fronted Hylophilus.**[2]

FAMILY **CŒREBIDÆ**.—THE HONEY CREEPERS. (Page 322.)

Genera.

(Characters same as those given for the Family)........ **Cœreba.** (Page 479.)

GENUS **CŒREBA** VIEILLOT. (Page 479, pl. CXIV., fig. 7.)

Species.

COMMON CHARACTERS.—*Adults:* Above plain dusky, or brownish slate, with top of head black, the rump always yellow or yellowish olive; a more or less extensive white spot at base of longer quills; ear-coverts blackish, like top of head, but separated from the latter by a conspicuous superciliary stripe of white; chin, throat, and malar region (sometimes chest also) uniform white, grayish white, or gray; breast (sometimes also belly and sides) bright yellow; outer tail-feathers more or less broadly tipped with white. *Young:* Above (including top of head) dull olive-brownish or dull brownish gray, the wings and tail marked with white as in adult; superciliary stripe indistinct (sometimes obsolete); lower parts dull whitish, strongly tinged on breast, etc., with pale yellow (sometimes entirely dull yellowish). *Nest* in bushes or small trees, oven-shaped, with entrance in one side, composed exteriorly of dried grass-stems, etc., lined with softer materials. *Eggs* 2–4, white or buffy white, finely speckled or sprinkled, chiefly on or round larger end, with umber-brown.

a[1]. *Adults* with chin, throat, cheeks, and upper part of chest white, or grayish white; back, scapulars, etc., very dark sooty slate, or blackish, not distinctly, if at all, different from top of head; rump yellow. *Young* with chin and throat dull whitish, and upper parts dull brownish gray.

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[1] *Sylvia decurtata* Bonap., P. Z. S. 1837, 118. *Hylophilus decurtatus* Baird, Review, i. 1866, 380. (*Helinai brevipennis* Giraud, Ann. Lyc. N. Y. 1850, 40. "Mexico and Texas.")

[2] *Hylophilus ochraceiceps* Scl., P. Z. S. 1859, 375.

b^1. Black loral streak narrower than the white above it; cheeks white almost up to the eye; white of throat extended over almost whole of chest, and yellow of breast not extended over flanks, which are pale grayish, sometimes faintly tinged with yellow; rump usually pure gamboge-yellow; lower tail-coverts and anal region pure white; length about 4.25–4.75, wing 2.30–2.65, tail 1.65–1.95, exposed culmen .55–.65, tarsus .75–.80. *Eggs* .67 × .50. *Hab.* Bahamas, Florida Keys, and portions of adjacent coast of southern Florida, north to Charlotte Harbor.

635. **C. bahamensis** (Reich.). **Bahama Honey Creeper.**

b^2. Black loral streak as wide as or wider than white above it, and continued backward broadly beneath eye; white of throat extended over only upper part of chest; yellow of breast continued backward over flanks, and even tingeing anal region and lower tail-coverts; yellow of rump usually perceptibly tinged with olive, and upper parts in general averaging somewhat darker; dimensions essentially the same as in *C. bahamensis.* *Hab.* Cozumel Island, coast of Yucatan.

C. caboti (Baird). **Cozumel Honey Creeper.**[1]

a^2. *Adult* with chin, throat, and malar region deep ash-gray; back, scapulars, etc., dull grayish olive or smoky slate, in marked contrast with black of top of head; rump yellowish olive. *Young:* Chin, throat, etc., dull light grayish yellow, scarcely different from color of other lower parts; upper parts dull smoky olive.

White spot at base of quills much reduced in size; rump yellowish olive-green, or olive-yellow; entire lower parts posterior to throat oil-yellow, becoming paler and much duller on flanks and under tail-coverts; length (skins) about 3.60–3.75, wing 2.05–2.30, tail 1.35–1.55. *Hab.* Middle America, from eastern Mexico to Chiriqui.

C. mexicana (Scl.). **Mexican Honey Creeper.**[2]

Family **MNIOTILTIDÆ.**—The Wood Warblers. (Page 322.)

Genera.

a^1. Gape with very small bristles, or none.

b^1. Hind-toe, with claw, as long as naked portion of tarsus in front; claw of middle toe on the same line, vertically, with the toe.

Plumage striped with black and white, the latter prevailing on lower parts .... **Mniotilta.** (Page 483.)

b^2. Hind-toe, with claw, much shorter than naked portion of tarsus, in front; claw of middle toe (looking from above) set obliquely to the axis of the toe.

c^1. Middle toe, with claw, as long as or longer than tarsus, in front, the wing without white bands or other markings.

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[1] *Certhiola caboti* "Baird, MS." Finsch, Verh. der K. K. Zool.-bot. Gesellsch. Wien, 1871, 790.

[2] *Certhiola mexicana* Scl., P. Z. S. 1856, 286.

d^1. Inner webs of tail-feathers chiefly white; prevailing color yellow, the wings and tail bluish gray, back olive-green, and under tail-coverts white.......................... **Protonotaria.** (Page 484.)

d^2. Inner webs of tail-feathers without white; color plain brownish or olive above (the head sometimes striped), whitish or buffy beneath.

e^1. Bill very much compressed; culmen straight, with basal portion elevated into a distinct narrow ridge; top of head plain brown (sometimes with an indistinct paler spot in middle of crown)...................... **Helinaia.** (Page 484.)

e^2. Bill very slightly compressed; culmen gently curved, its base not compressed nor elevated; top of head with two black stripes separated by a broader one of buff. **Helmitherus.** (Page 485.)

c^2. Middle toe, with claw, shorter than tarsus in front, or else wing with two white bands.[1]

d^1. Gape without obvious bristles; bill very acute, usually without notch, and with straight outlines, very rarely slightly decurved at tip.

e^1. Difference between length of wing and tail equal to or greater than length of tarsus in front. **Helminthophila.** (Page 485.)

e^2. Difference between length of wing and tail decidedly less than length of tarsus in front........................... *Oreothlypis.*[2]

d^2. Gape with distinct bristles; bill variable, but rarely as above.

e^1. Bill elongate-conical, with straight outlines, and without distinct (if any) notch; wing not more than 2.30.

Above bluish or grayish, with triangular patch of olive-green on back; wings usually with two white bands, and inner webs of outer tail-feathers with white spots; under parts with at least anterior half yellow. **Compsothlypis.** (Page 490.)

e^2. Bill variable, but always with decidedly curved outlines, and usually with distinct notch; wing not less than 2.30 (usually more than 2.50).

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[1] The exception is *Dendroica dominica* (LINN.).

[2] *Oreothlypis* RIDGW., Auk, i. April, 1884, 169. Type, *Compsothlypis gutturalis* CAB.

The type of this genus is slate-gray or plumbeous above, with a triangular patch of black on the back; chin, throat, and breast intense cadmium-orange; sides and flanks plumbeous, middle line of belly white. A Mexican species, which probably occurs within our borders, in western Texas or New Mexico, is very different from the type in coloration. The head and neck (except beneath) are plumbeous-gray, relieved by a broad white superciliary stripe; back and rump bright olive-green; wings and tail plumbeous-gray; chin, throat, and breast yellow, the chest with a chestnut spot; posterior lower parts white, the flanks tinged with gray. This is *O. superciliosa* (*Conirostrum superciliosum* HARTL., Rev. Zool. 1844, 215). In both species the sexes are essentially alike in coloration.

*f*¹. Bill slender, its greatest depth less than half the distance from nostril to tip, or else[1] width at base much greater than its depth, and tarsus with whole of outer side very distinctly scutellate.

*g*¹. Tail even or emarginate, usually very much shorter than wing (the difference usually exceeding length of tarsus)[2]................. **Dendroica.** (Page 492.)

*g*². Tail more or less rounded or graduated (or else with basal two-thirds hidden by coverts), never very much shorter than wing (sometimes longer), the difference never exceeding length of tarsus.

*h*¹. Lower parts whitish, conspicuously streaked with grayish brown or dusky, above plain brown or dusky, the head sometimes striped. **Seiurus.** (Page 518.)

*h*². Lower parts yellow or buffy, sometimes ashy, or mixed ashy and black, anteriorly; above plain olive, olive-green, or grayish.

*i*¹. Bill straight; above olive or olive-green, the head sometimes grayish. **Geothlypis.** (Page 520.)

*i*². Bill decidedly curved; above gray (the head yellowish olive-green in one species). *Teretistris.*[3]

*f*². Bill stout but much compressed, its greatest depth not less than half its length from nostril to tip; width at base not greater than depth; outer side of tarsus smooth or "booted" for upper half, at least.

*g*¹. Wing 2.90, or more; above, including tail, olive or olive-green; beneath yellow for anterior, white for posterior, half; no white on tail-feathers. **Icteria.** (Page 526.)

*g*². Wing less than 2.75; above plumbeous, the tail black, with much white on outer feathers; beneath red and white in males, whitish or buffy, tinged with red, in females.............................. *Granatellus.*[4]

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[1] The single exception is "*Geothlypis*" *poliocephala* Baird.

[2] Notable exceptions to the last character are *D. dominica* (Linn.) and *D. palmarum* (Gmel.), one or both of which should in strictness be removed from *Dendroica.*

[3] *Teretistris* Cab., J. f. O. iii. 1855, 475. Type, *Anabates fernandinæ* Lemb. (Only two species known, both peculiar to Cuba.)

[4] *Granatellus* "Du Bus. Esq. Orn. (1850?) sub tab. 24." Type, *G. venustus* Du Bus.

Four very beautiful species of this genus occur in Mexico, as follows: (1) *G. venustus* Du Bus, in Colima, Tehuantepec, etc.; (2) *G. francescæ* Baird, from Tres Marias; (3) *G. sallæi* (Bonap.), from Cordova, etc.; and (4) *G. boucardi* Ridgw., from Yucatan. A fifth species, *G. pelzelni* Scl., is found in the Amazon Valley.

a^2. Gape with very distinct oristles.
  b^1. Top of head without distinct stripes or yellow crown-patch.
    c^1. Lower parts yellow (throat sometimes black); tail not longer than wing, nearly even.. **Sylvania.** (Page 527.)
    c^2. Lower parts without yellow (except in Central and South American species of *Setophaga*).
      d^1. Bill broad and much depressed at base (as in certain Flycatchers); tail parti-colored, decidedly rounded, usually longer than wing. Plumage with more or less of red and black (except in female and young of *S. ruticilla*)......... **Setophaga.** (Page 529.)
      d^2. Bill smaller, narrow and deep at base (as in some Titmice); tail unicolored, slightly emarginated, about as long as wing, or a little shorter.
        e^1. Gray above, with white rump and black crown; face and throat red, rest of lower parts whitish. **Cardellina.** (Page 530.)
        e^2. Prevailing color red, with white ear-coverts, or else with whitish tips to feathers of head and neck. **Ergaticus.** (Page 531.)
  b^2. Top of head distinctly striped, or else with a yellow crown-patch. (Lower parts at least partly yellow.)
    c^1. No white on tail; a black stripe on each side of crown, enclosing a broader one of light olive, ochraceous-orange, or chestnut; wing and tail less than 2.50........................... **Basileuterus.** (Page 531.)
    c^2. Tail-feathers (except middle pair) tipped with a white spot; top of head black, with a yellow crown-patch; wings and tail about 3.00. *Euthlypis.*[1]

GENUS **MNIOTILTA** VIEILLOT. (Page 480, pl. CXV., fig. 7.)

Species.

Plumage black striped with white above, beneath white with black streaks; wing with two white bands, and two outer tail-feathers with white spot near end of inner webs. *Adult male:* Throat thickly streaked with black, the latter sometimes nearly uniform. *Young male:* Throat pure white, without streaks; otherwise like adult. *Adult female:* Similar to young male, but colors duller, the black less intense, and white of lower parts tinged with brownish, especially along sides. *Nestling:* Similar to adult female, but colors much duller and less sharply defined, the head-stripes dull grayish instead of black, and the white parts tinged with fulvous. Length 4.55–5.50, wing 2.60–2.90, tail 1.95–2.25. *Nest* embedded in ground in woods. *Eggs* 3–5, .67 × .57, creamy white, thickly speckled, chiefly on larger end, with reddish brown. *Hab.* Eastern North America (north to Fort Simpson, Hudson's Bay, etc.) in summer; Gulf States, West Indies, Middle America, and northern South America (Colombia, Venezuela) in winter; accidental in California (Farallon Islands)... 636. **M. varia** (Linn.). **Black and White Warbler.**[1]

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[1] *Euthlypis* CAB., Mus. Hein. i. 1850, 18. Type, *E. lachrymosa* CAB.

The single species of this genus is 5.50–6.00 long (wing and tail each about 3.00); upper parts, except as described above, dark slate-color; lower parts yellow, deepening into tawny ochraceous on chest, the lower tail-coverts whitish; a white spot on lores, and a smaller white spot on each eyelid. It occurs as far north as Cordova and Mazatlan, perhaps farther.

Genus **PROTONOTARIA** Baird. (Page 481, pl. CXV., fig. 8.)

Species.

Head and lower parts, except lower tail-coverts, yellow; lower tail-coverts, lining of wing, and inner webs of tail-feathers, white; back, scapulars, rump, and sometimes top of head, olive-green; wings plain bluish gray or plumbeous. *Adult male:* Head, neck, and lower parts (except tail-coverts) intense cadmium-yellow, sometimes tinted with orange, the top of the head sometimes olive-greenish. *Adult female:* Similar to the duller-colored males, but yellow appreciably less pure, the top of the head always olive-greenish, and gray of wings and tail less bluish; size somewhat less. *Nestling:* Head, neck, chest, fore-part of sides, and back olive, lighter on lower parts; no yellow beneath, except after moult has commenced; otherwise much like adult female. Length about 5.00–5.50, wing 2.90–3.00, tail 2.25. *Nest* of mosses, built in deserted woodpeckers' holes or other cavities in trees or stumps standing in or near water. *Eggs* 3–7, .68 × .55, glossy white, creamy white, or creamy buff, thickly spotted with rich madder-brown and purplish gray. *Hab.* Willow swamps and borders of ponds and streams, in bottom-lands of the Mississippi Valley and Gulf States, north regularly to Iowa, Illinois, Indiana, etc., but rare or casual on the Atlantic coast north of Georgia; in winter, Cuba, Central America, and northern South America (Colombia and Venezuela).
637. **P. citrea** (Bodd.). **Prothonotary Warbler.**

Genus **HELINAIA** Audubon. (Page 481, pl. CXVI., fig. 1.)

Species.

Adult: Above plain olive-brownish, more reddish brown on top of head and nape, sometimes on wings and tail also; lower parts whitish, more or less tinged with yellowish, the sides more olivaceous; a dusky loral streak, continued behind the eye, bordered above by a distinct superciliary stripe of brownish white; forehead usually with a more or less distinct median streak of pale yellowish or whitish; bill light brownish; iris brown; legs and feet flesh-color. *Nestling:* General color uniform dull cinnamon-brown, including head, neck, and lower parts, except belly, which is dirty white; wings (except coverts) and tail essentially as in adult. Length 5.15–6.50, wing 1.85–2.13, tail 1.85–2.17, culmen .65–.74, tarsus .65–.75. *Nest* bulky and loosely constructed, of dry leaves, fine grasses, etc., placed usually 4–8 feet up in cane (*Arundinaria*) stalks, near or over water. *Eggs* 1–3, .75 × .58, white, usually plain, but sometimes speckled or spotted with lilac or pale brown. *Hab.* South Atlantic and Gulf States, from South Carolina and Florida to eastern Texas (Navarro County), and lower Mississippi Valley; north to Dismal Swamp, Virginia, the lower Wabash (Knox County, Indiana), and southeastern Missouri; Jamaica in winter........ 638. **H. swainsonii** Aud. **Swainson's Warbler.**

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[1] Two geographical races have been recognized, their principal characters consisting chiefly of differences in proportions, as follows:

Atlantic coast and West Indian specimens.—*Male:* Wing 2.72–2.88 (2.78), tail 1.92–2.20 (2.07), culmen .45–.50 (.48), bill from nostril .32–.40 (.37), tarsus .60–.68 (.65), middle toe .50–.58 (.54). *Female:* 2.70, 2.00–2.05 (2.02), .45–.48 (.46), .36–.38 (.37), .68–.70 (.69), .50. (True *M. varia.*)

Mississippi Valley and Middle American specimens.—*Male:* Wing 2.70–2.90 (2.80), tail 2.00–2.24 (2.09), culmen .40–.48 (.44), bill from nostril .30–.38 (.32), tarsus .62–.65 (.63), middle toe .49–.58 (.52). *Female:* 2.60–2.75 (2.65), 1.92–2.00 (1.96), .40–.45 (.42), .32, .66, .50–.56 (.53). (*M. varia borealis* Nutt.? *Mniotilta borealis* Nutt., Man. I. b. 2d ed. 1840, 705.)

Further examination of extensive material is necessary to decide the question of whether the distinction can be maintained.

GENUS **HELMITHERUS** RAFINESQUE. (Page 481, pl. CXVI., fig. 2.)

Species.

Adult: Head, neck, and lower parts buff, the first with two broad black stripes on the pileum and a narrower black postocular streak; upper parts plain olive-green; upper mandible dark brown, lower paler; iris dark brown; legs and feet pale brownish flesh-color. *Nestling:* Head, neck, and lower parts deep buff, the black head-stripes of the adult indicated by indistinct stripes of dull brown; back, scapulars, rump, and wing-coverts dull light brown, tinged with cinnamon, the greater coverts tipped with buff. Length about 5.00–5.75, wing 2.65–2.90, tail 1.90–2.20, culmen .60–.65, tarsus .70; female averaging slightly smaller. *Nest* embedded in ground, among dead leaves, ferns, etc. *Eggs* 2–5, .68 × .52, creamy white, or pinkish white, finely speckled, chiefly on or round larger end, with reddish brown. *Hab.* Eastern United States, north to Connecticut Valley, Great Lakes, etc., but chiefly south of 40°; south, in winter, to Cuba, Jamaica, Yucatan, and through Central America to Panama.. 639. **H. vermivorus** (Gmel.). **Worm-eating Warbler.**

GENUS **HELMINTHOPHILA** RIDGWAY. (Page 481, pl. CXVI., fig. 5.)

Species.

COMMON CHARACTERS.—Length about 3.95–5.25. *Nest* on or very close to ground, in woods or thickets, composed of fine grasses, rootlets, etc., deeply cup-shaped, open above (in *H. luciæ* in holes or behind bark of trees, stumps, etc.). *Eggs* 3–5, white, speckled, more or less, with brown.

a^1. Middle and greater wing-coverts tipped, more or less broadly, with yellow or white. (A black or dusky streak from bill to eye; inner webs of three outer tail-feathers extensively white; forehead yellow.)
  b^1. Throat and ear-coverts black in adult males, deep gray or dusky olive in females.
    c^1. Cheeks and median lower parts white, or only slightly tinged with yellow, the sides and flanks ash-gray; back, scapulars, and rump ash-gray (sometimes tinged with olive-green); wing-bands yellow,

usually nearly confluent, producing a nearly continuous patch; *adult female* with throat and ear-coverts deep gray. *Eggs* .64 × .53, white, finely—usually sparsely and rather minutely—speckled with brown, chiefly on or round larger end. *Hab.* Eastern United States and British Provinces, breeding from about 40° northward; wintering in Cuba, eastern Mexico, Central America, and Colombia.

642. **H. chrysoptera** (Linn.). **Golden-winged Warbler.**

*c*². Cheeks and lower parts pure gamboge-yellow, the sides tinged with olive; back, scapulars, and rump bright olive-green; wing-bands (usually, at least) white, narrower and more widely separated; *adult female* with throat and cheeks dusky olive-greenish. *Hab.* Northeastern United States (New Jersey, etc.).

—. **H. lawrencei** (Herrick). **Lawrence's Warbler.**[1]

*b*². Throat entirely pure yellow or white, in both sexes; ear-coverts olive-green or light ash-gray for upper half, pure yellow or white for lower half; a narrow black streak behind eye.

*c*¹. Hind-neck, back, scapulars, and rump bright olive-green; lower parts (including sides of head, except as described) pure gamboge-yellow, the sides and flanks tinged with olive-green; wing-bands usually white, extremely variable as to width (sometimes nearly confluent, more rarely almost obsolete). *Eggs* .60 × .48, white, finely—usually minutely and rather sparsely—speckled with brown and black, chiefly on or round larger end. *Hab.* Eastern United States, north to Connecticut Valley, southern New York, the Great Lakes, and Minnesota (but chiefly west of Alleghanies, except north of 40°); south, in winter, through eastern Mexico to Costa Rica.

641. **H. pinus** (Linn.). **Blue-winged Warbler.**

*c*². Hind-neck, back, scapulars, and rump ash-gray; lower parts, including sides of head, upward nearly to eye, pure white, usually tinged on breast (sometimes on chin also) with yellow, the sides and flanks tinged with ash-gray; wing-bands either yellow or white, broad or narrow. *Hab.* Eastern United States (Virginia, New Jersey, New York, Connecticut, Massachusetts, Michigan, etc.).

—. **H. leucobronchialis** (Brewst.). **Brewster's Warbler.**[2]

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[1] Doubtless either a hybrid of *H. chrysoptera* and *H. pinus*, or else a yellow dichromatic phase of the former. The latter supposition seems, in the light of recently studied material, to be the more probable solution of the case.

[2] This puzzling bird apparently bears the same relation to *H. pinus* that *H. lawrencei* does to *H. chrysoptera*. In a large series of specimens, every possible intermediate condition of plumage between typical *H. pinus* and *H. leucobronchialis* is seen, just as is the case with *H. chrysoptera* and *H. lawrencei*. If we assume, therefore, that these four forms represent merely two dichroic species, in one of which (*H. pinus*) the xanthochroic (yellow) phase and in the other (*H. chrysoptera*) the leucochroic (white) phase represents the normal plumage,—and admitting that these two species, in their various conditions, hybridize (which seems to be an incontrovertible fact),—we have an easy and altogether plausible explanation of the origin of the almost interminably variable series of specimens which have found their way into the "waste-basket" labelled "*H. leucobronchialis.*"

a^2. Wings plain olive-green or gray.

b^1. Inner webs of three outer tail-feathers marked with a large white spot, extending to the shaft.

Adult male: Forehead and lower parts yellow; a large patch of black covering lower throat, chest, and upper breast; band across anterior part of crown black; rest of crown, with occiput, rather dull ash-gray; rest of upper parts, including ear-coverts, uniform olive-green; anterior half of lesser wing-covert region lemon-yellow; quills dusky, edged with light ash-gray. *Adult female:* Without black on crown, and that of throat and chest replaced by dusky olive; otherwise much like male. Length about 3.95–4.50, wing 2.40, tail 1.95. (Bill more acute and decurved at tip than in other *Helminthophilæ.*) *Nest* said to be placed "in low trees." *Eggs* (reputed) 4, about .74 × .60, dull white, heavily wreathed round larger end with dark brown. (*H. B. Bailey*, Bull. Nutt. Orn. Club, viii. 1883, p. 38.) *Hab.* South Atlantic and Gulf States, from southern Virginia and South Carolina to Louisiana; western Cuba in winter.

640. **H. bachmani** (Aud.). **Bachman's Warbler.**

b^2. Inner webs of outer tail-feathers without white spot (if with broad white edging, this not extending nearly to shaft).

c^1. Upper tail-coverts olive-green; wing 2.40, or more.

d^1. Lores and part of ear-coverts black.

Adult male: Above olive-green; lower parts (including under tail-coverts), suborbital spot, and forehead pure gamboge-yellow; length 4.75, wing 2.55, tail 2.00, exposed culmen .55, tarsus .75. *Hab.* Vicinity of Cincinnati, Ohio.

—. **H. cincinnatiensis** (Langd.). **Cincinnati Warbler.**[1]

d^2. Lores and ear-coverts without any black.

e^1. Under tail-coverts and axillars pure white; no rufous or chestnut on crown, in any stage; first quill equal to or longer than fourth (usually longer, and sometimes longest).

Adult male in spring: Top of head and hind-neck pure ash-gray; rest of upper parts plain olive-green; quills dusky, edged with light ash-gray; sides of head whitish, relieved by a gray postocular streak, or mostly ash-gray, relieved by a superciliary streak and less distinct suborbital space of white; lower parts white, the sides and flanks tinged with ash-gray (most strongly on sides of breast). *Adult female in spring:* Similar to male, but gray of head and neck usually more or less tinged with olive-green, and white of lower parts usually more or less stained with pale olive-yellowish, especially on sides. *Young in first autumn:* Upper parts entirely olive-green; lower parts (except under tail-coverts) strongly tinged with olive-yellow (chin, throat, chest, and sides sometimes uniform pale olive-yellow or greenish sulphur-yellow). *Hab.* Northern North America, east of Rocky Mountains, breeding from Maine, northern New York, etc., to Fort Simpson and Hudson's Bay; migrating through eastern United States, chiefly west of Alleghanies (west to Rocky Mountains), south through eastern Mexico and Central America to Colombia.

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[1] *Helminthophaga cincinnatiensis* Langdon, Jour. Cinc. Soc. Nat. Hist. July, 1880, 119, 120, pl. 4.

There are strong grounds for believing this bird to be a hybrid between *H. pinus* and *Oporornis formosa.* (See on this point Bull. Nutt. Orn. Club, v. 1880, p. 237.)

647. **H. peregrina** (Wils.). **Tennessee Warbler.**

*e*². Under tail-coverts yellow; axillars yellow (except in *H. virginiæ*); adult male (sometimes female also) with a concealed patch of orange-rufous or chestnut on crown; first quill shorter than fourth.

*f*¹. Axillars and under wing-coverts yellow; upper parts olive-green (the head and neck sometimes ashy); lower parts chiefly yellowish.

*g*¹. No distinct orbital ring; lower tail-coverts pale, rather greenish, or olivaceous, yellow, the longer ones with a concealed grayish central streak; rest of lower parts pale yellow, more or less tinged or indistinctly streaked with olivaceous or olive-grayish; crown-patch, when present, orange-rufous.

*h*¹. Above dull olive-green, sometimes tinged with gray, especially on head; lower parts pale yellow (becoming white on anal region), the darker indistinct streaks grayish; length 4.60–5.30, wing 2.31–2.52 (2.41), tail 1.92–2.10 (1.98). *Eggs* .63 × .49, white, or creamy white, finely speckled, chiefly on larger end, with reddish brown. *Hab.* Northern North America, breeding from Rocky Mountains to coast of Alaska (north of the peninsula) and Mackenzie River district; migrating south through Mississippi Valley (more sparingly east of Alleghanies) to south Atlantic and Gulf States and eastern Mexico....... 646. **H. celata** (Say). **Orange-crowned Warbler.**

*h*². Above bright olive-green, beneath bright greenish yellow (nearly pure gamboge-yellow along median line), the darker indistinct streaks olive-greenish; length about 4.70–5.00, wing 2.22–2.44 (2.38), tail 1.82–2.00 (1.95). *Eggs* .63 × .49, colored like those of *H. celata. Hab.* Pacific coast, breeding from coast ranges of southern California to Kadiak; south, in winter, to Lower California and western Mexico, and eastward during migrations to Colorado, Arizona, etc.

646*a*. **H. celata lutescens** Ridgw.

(81.) **Lutescent Warbler.**

*g*². A distinct white, or yellowish white, orbital ring; lower tail-coverts pure (though sometimes rather pale) gamboge-yellow, without concealed grayish streaks; rest of lower parts pure gamboge-yellow in adults (females with belly and flanks whitish), paler and duller yellow (deepest on breast), but without indication of streaks, in immature specimens; crown-patch, when present, chestnut.

*h*¹. Less brightly colored, the rump and upper tail-coverts less yellowish olive-green, and lower parts less intense yellow; wings and tail shorter. *Young:* Plain greenish olive above (duller anteriorly), the middle and greater wing-coverts distinctly tipped with pale olive-buffy; anterior and lateral lower parts plain light olive, the belly and lower tail-coverts pale buffy yellow. Length about 4.20–5.00, wing (male) 2.30–2.45 (2.37), tail 1.85–1.90 (1.87). *Eggs* .61 × .47, colored like those of *H. celata. Hab.* Eastern North America, breeding from northern United States north to Hudson's Bay and interior of British America; accidental in Greenland; in winter, south to eastern Mexico and Guatemala.

645. **H. ruficapilla** (Wils.).

Nashville Warbler.

*h*². More brightly colored, the rump and upper tail-coverts more yellowish olive-green, the lower parts richer gamboge-yellow; wings and tail longer; length about 4.75, wing (male) 2.40–2.55 (2.47), tail 1.90–2.00 (1.97). *Hab.* Western United States, from Rocky Mountains to Pacific coast; in winter, south to western Mexico.

645*a*. **H. ruficapilla gutturalis** Ridgw.

Calaveras Warbler.

f^2. Axillars and under wing-coverts pure white (tinged with buff in young); upper parts ash-gray, changing to yellowish olive-green on rump and upper tail-coverts; lower parts chiefly white, the under tail-coverts and patch on chest (sometimes extended over throat) pure gamboge-yellow.

Crown-patch (wanting in immature birds and some adult females) chestnut. *Adult female* with yellow of chest, etc., paler (and usually more restricted) than in male, and chestnut crown-patch usually less distinct (sometimes wanting). *Young:* Somewhat like adult female, but browner, the lower parts tinged with buffy, the wing-coverts tipped with pale grayish buff, yellow of chest wanting, and no chestnut on crown. Length 4.75–5.00, wing about 2.30–2.50, tail 1.90–2.00. *Eggs* .61 × .47, creamy white, finely and rather densely speckled round larger end with chestnut and purplish gray. *Hab.* Mountain districts of western United States (except Pacific coast), north to Wyoming, Colorado, Utah, and Nevada; south through central Mexico to Guanajuato.

644. **H. virginiæ** (Baird). **Virginia's Warbler.**

c^2. Upper tail-coverts chestnut (pale tawny in young); wing not more than 2.30.

Adult (*sexes alike*): Above ash-gray, the rump and upper tail-coverts and patch on crown (except sometimes in female) chestnut; orbital ring and lower parts white or buffy white. *Young:* Essentially like adult, but no chestnut on crown, the rump and upper tail-coverts pale tawny, and wing-coverts tipped with buffy. Length 4.00–4.65, wing about 2.20–2.30, tail 1.70–1.90. *Nest* in holes or behind bark of trees, stumps, etc. *Eggs* 3–4, .57 × .44, white or creamy white, finely speckled, usually in dense ring round larger end, with reddish brown. *Hab.* Valleys of lower Colorado and Gila Rivers, in Arizona and southeastern California, and south into Sonora.

643. **H. luciæ** (Coop.). **Lucy's Warbler.**

Genus **COMPSOTHLYPIS** Cabanis. (Page 481, pl. CXVI., fig. 3.)

Species.

Common Characters.—Above gray, bluish gray, or grayish blue, the back with a triangular patch of olive-green; wings usually with two white bands; inner webs of outer tail-feathers marked with a white spot (except sometimes in *C. insu-*

laris); lower parts yellow, for anterior half at least, the color usually deepening on chest into orange-brownish. (*Females* and *immature males* of certain species with whole upper parts tinged, more or less, with olive-green, and yellow of lower parts paler.)

*a*¹. Eyelids white; yellow of lower parts not extending farther back than breast, the sides and flanks white, tinged with bluish gray and rusty brown.

Adult male: Above bluish gray (more blue on head), the back bright olive-green; wing with two broad white bands; chin, throat, and breast yellow; chest more or less tinged with orange-brown, this often bordered anteriorly by a blackish band across lower throat; rest of lower parts white, the sides tinged with bluish gray and reddish brown. *Adult female:* Similar to the male, but paler, all the colors less pronounced. *Young in first autumn:* Upper parts in general tinged with olive-green; yellow of lower parts paler. *Young:* Yellow of lower parts replaced by light grayish, the chin tinged with yellow; above dull grayish, more olive on back, the wings and tail much as in adult female, but duller grayish. Length 4.12–4.95, wing about 2.20–2.40, tail 1.60–1.85. *Nest* placed within hanging tufts of lichens or "beard-mosses," or bunches of dead leaves and other rubbish caught on hanging branchlets during freshets. *Eggs* 3–5, .64 × .46, white, or creamy white, thickly speckled with reddish brown, chiefly round larger end. *Hab.* Eastern United States and Canada, breeding throughout; in winter, southern Florida, more northern West Indies, eastern Mexico, and Guatemala.................. 648. **C. americana** (LINN.). **Parula Warbler.**

*a*². Eyelids dusky; yellow of lower parts extending back over sides and upper part of belly (sometimes over whole surface except under tail-coverts).

*b*¹. Belly chiefly, or entirely, white; wing with two broad white bands.

*c*¹. White spot on inner web of outer tail-feather extending quite to shaft, for greater part of its extent, in adult male, and very nearly to shaft in female.

Adult male: Above bluish gray, or plumbeous, relieved by olive-green patch on back and two broad white wing-bands; lores deep black; chin, throat, chest, breast, and sides gamboge-yellow, deepening into a more saffron tint on chest; rest of lower parts white, the flanks usually tinged with brown. *Adult female:* Much duller than male, the upper parts tinged with olive-green, lores dull grayish dusky, yellow of lower parts paler and duller, etc. Length 4.25–4.75, wing 2.00–2.20, tail 1.58–1.75. *Hab.* Lower Rio Grande Valley in Texas (and, doubtless, adjacent portions of Mexico).

649. **C. nigrilora** (COUES). **Sennett's Warbler.**

*c*². White spot on inner web of outer tail-feather scarcely if at all touching shaft in adult male, and nearly obsolete in female.

*d*¹. Otherwise similar in color to *C. nigrilora*, but rather less bluish gray above, the lores less deeply black in male and more decidedly grayish in female; wing 2.15–2.30, tail 1.90–2.00. *Hab.* Tres Marias Islands, western Mexico.

C. insularis (LAWR.). **Tres Marias Parula.**[1]

*d*². Above dull slate-gray (tinged with olive in females), the back dull olive-green; lores dull grayish; white wing-bands much narrower (nearly obsolete in some females); yellow and white of lower parts both much duller; white spots on inner webs of outer tail-feathers reduced to a mere edging (except in a few males, in which the white oblique spot is much smaller than in *C. insularis*); wing 2.10–2.20, tail 1.90–2.00. *Hab.* Socorro Island, off coast of northwestern Mexico.

C. graysoni RIDGW. **Socorro Warbler.**[2]

*b*⁷. Belly wholly yellow; wing without white bands, or with mere indications of them.

Adult (sexes apparently alike in color): Above dark grayish blue (almost indigo on top of head); lores deep black; lower parts, except under tail-coverts, rich gamboge-yellow, deepening into rich saffron (sometimes rufous-orange) on chest; wing about 2.00–2.15, tail 1.60–1.75. *Hab.* Guatemala to Peru.

C. inornata BAIRD. **Central American Parula.**[3]

GENUS **DENDROICA** GRAY. (Page 482, pl. CXVI., figs. 4, 6, 7; pl. CXVII., figs. 1, 2.)

Species and Subspecies.

*a*¹. Bill very acute, the tip very appreciably decurved; tongue with the terminal half having the edges folded over upon the upper surface, the terminal portion deeply cleft and fringed. (Subgenus *Perissoglossa* BAIRD.)

*b*¹. Inner webs of exterior tail-feathers with large white patch. *Adult male:* Top of head blackish; sides of head and neck, rump, and lower parts gamboge-yellow, becoming much paler (sometimes white) on under tail-coverts; ear-coverts chestnut or rusty, and throat sometimes tinged with same; a black line from bill to eye, continued behind the latter;

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[1] *Parula insularis* LAWR., Ann. Lyc. N. Y. x. Feb. 1871, 4. *Compsothlypis insularis* STEJN., Auk, i. Apr. 1884, 170.

[2] New species. Although Mr. Lawrence mentioned both Tres Marias and Socorro specimens in his original description of *Parula insularis*, his description and measurements were taken from a specimen from the former locality, which may, therefore, be considered the type. With the same material before me as that which Mr. Lawrence examined, I am able to appreciate readily the differences of plumage which he points out as distinguishing the birds from Socorro. In fact, I am somewhat surprised that he considered them the same species. The Socorro bird is, upon the whole, more different from *C. insularis* than the latter is from *C. nigrilora*.

[3] *Parula inornata* BAIRD, Review, i. 1866, 171. *Compsothlypis pitiayumi inornata* STEJN., Auk, i. Apr. 1884, 170.

throat, chest, and sides streaked with black; back olive-greenish; a white patch on wings, covering middle and greater coverts. (*In autumn*, markings much obscured by grayish and olive suffusion.) *Adult female:* Grayish olive above, brighter on rump, the wing-coverts merely edged with whitish; beneath dull yellowish white (sometimes deeper yellowish), streaked on chest, etc., with dusky; white tail-spots much restricted. Length 4.70–5.65, wing 2.85, tail 2.15. *Nest* a very neat cup-shaped structure, about 2.25 deep and 3.00 across outside, with cavity 1.25 deep by 1.75 wide, composed of dried spruce twigs, grasses, spiders' webs, etc.; placed in evergreen trees or bushes, usually not far from ground. *Eggs* 3–4, .70 × .52, dull white, buffy white, or grayish white, speckled or spotted round larger end with dark brown or reddish brown and lilac-gray, occasionally mixed with a few smaller markings of blackish. *Hab.* Eastern North America, north to Hudson's Bay, Lake Winnipeg, etc., breeding from northern New England northward (also in mountains of Jamaica); winters in Greater Antilles.

650. **D. tigrina** (GMEL.). **Cape May Warbler.**

b^2. Inner webs of tail-feathers without white spots. *Adult male:* Whole top of head and broad streak on side of head black; back and lesser wing-coverts dusky olive spotted or broadly streaked with black; middle wing-coverts tipped with yellow, greater coverts with white; rump, upper tail-coverts, and tail yellowish olive-green; rest of plumage gamboge-yellow, tinged with dusky olive on sides, the sides of chest, etc., streaked with black; length 4.75, culmen .45, tarsus .75. *Hab.* Kentucky (Henderson; known only from Audubon's plate and description)........................ —. **D. carbonata** (AUD.). **Carbonated Warbler.**

a^2. Bill not very acute nor distinctly decurved at tip; tongue gradually tapering to the slightly cleft and fringed tip.[1]

b^1. A white spot at base of quills, in combination with other white markings on wings; wing half as long again as tail. (Subgenus *Peucedramus* COUES.)

Adult male: Head, neck, and chest orange-rufous, or deep ochraceous, sometimes tinged with olive; lores and ear-coverts black, forming a conspicuous patch on side of head; back, scapulars, and rump plain olive or dull olive-gray; middle and greater wing-coverts broadly tipped with white; belly dull white. *Adult female* (and *male in first year*): Head, neck, and chest dull buffy or yellowish, the top of the head and hind-neck tinged with olive-green, and black patch on side of head in male replaced by a much less distinct one of dusky (usually confined to ear-coverts); otherwise similar to male, but duller. Length 4.60–5.40, wing averaging about 3.00, tail about

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[1] This character has not been tested in all the species referred to this group, and may not prove diagnostic in the case of some of those not examined; the indications, however, are strongly in favor of the probability that essentially the same style of tongue will be found in them all.

2.30. *Hab.* Highlands of Guatemala and Mexico, north to southern border of United States (Texas to Arizona).

651. **D. olivacea** (Giraud). **Olive Warbler.**

*b*². No white spot at base of quills, or else no other white markings on outer surface of wings; wing less than half as long again as tail. (Subgenus *Dendroica* Gray.)

*c*¹. Inner webs of outer tail-feathers with a large patch or broad edging of yellow, but without white.

*d*¹. Tarsus not more than .75 (usually much less); adult male with crown olive-yellow or yellowish olive-green, without distinct orange-rufous suffusion. (*Adult males:* Above bright yellowish olive-green, the wing-feathers broadly edged with yellow; rest of plumage pure gamboge-yellow, the chest and sides streaked with chestnut-red. *Adult females:* Colors duller, the yellow paler, and reddish streaks on lower parts very indistinct or (usually) altogether wanting. *Young:* Somewhat like adult female, but still duller, the lower parts sometimes dull whitish, the upper parts more grayish. Length about 4.50–5.25, wing 2.35–2.65, tail 1.80–2.10. *Nest* a compact cup-shaped structure of grayish plant-fibres, spiders' webs, etc., lined with plant-down and soft feathers, built in trees (often in orchards or shade trees). *Eggs* 2–6, .66 × .48, greenish white or very pale greenish, spotted, usually in wreath round larger end, with umber-brown, blackish, and lilac-gray.)

*e*¹. Deeper colored, the *adult male* with chestnut streaks on breast and sides much broader and richer, the *adult female* decidedly deeper yellow. *Hab.* Eastern and northern North America, east of Rocky Mountains; in winter, south through eastern Mexico and Central America to northern South America.

652. **D. æstiva** (Gmel.). **Yellow Warbler.**

*e*². Paler, the *adult male* with chestnut streaks on breast and sides averaging much narrower and paler, the *adult female* decidedly paler yellowish. *Hab.* Western North America, east to Rocky Mountains; in winter, south through western and central Mexico and south at least to Panama.

(82.) —. **D. æstiva morcomi** Coale. **Western Yellow Warbler.**[1]

*d*². Tarsus not less than .75 (usually decidedly more).

*e*¹. *Adult males* with top of head yellow, the crown sometimes more or less strongly tinged with orange-rufous.

*f*¹. Wing (male) 2.80, tail 2.45; above light yellowish olive-green, becoming nearly pure lemon-yellow on top of head, rump, and upper tail-coverts, the latter broadly streaked mesially with olive-greenish; beneath lemon-yellow, the breast and sides very sparsely and narrowly streaked with chestnut. *Hab.* Central Mexico (Guanajuato).

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[1] *Dendroica æstiva morcomi* Coale, Bull. Ridgw. Orn. Club Chic., No. 2, April, 1887, 82.

D. dugesi Coale. **Dugès's Yellow Warbler.**[1]

*f*². Wing (male) 2.40–2.60, tail 2.00–2.20; above much darker olive-green, scarcely, if at all, more yellowish posteriorly, the top of head usually more or less strongly tinged with orange-rufous; beneath rich gamboge-yellow, the breast and sides broadly streaked with bright reddish chestnut. *Hab.* West Indies in general, including Bahamas; Cozumel Island, Yucatan.

D. petechia (Linn.). **Antillean Yellow Warbler.**[2]

*e*². *Adult males* with whole head chestnut or chestnut-rufous. (*Adult males:* Head rich tawny rufous or chestnut, lighter, or more orange-tawny, on throat; above olive-green, the wings dusky, with broad greenish yellow edgings; lower parts pure gamboge-yellow, the chest and sides usually narrowly streaked, more or less, with rufous or orange-tawny. *Adult females:* Above grayish olive-green, beneath pale yellow, more or less tinged with olive, especially on sides and flanks. *Young:* Like adult females, but lower parts dull yellowish white (some specimens dull ash-gray above, yellowish white beneath, the throat, etc., streaked with rufous). Length about 5.00–5.50, wing 2.50–2.70, tail 2.10–2.25, tarsus about .80.)

*d*¹. *Adult male* with head bright orange-chestnut or orange-tawny above, paler orange-tawny beneath. *Hab.* Coast of Honduras and Yucatan. **D. bryanti** Ridgw. **Bryant's Yellow Warbler.**[3]

*d*². Adult male with head rich chestnut. *Hab.* Lower California, and adjacent coast of western Mexico.

653. **D. bryanti castaneiceps** Ridgw. **Mangrove Warbler.**

*c*². Inner webs of outer tail-feathers with a large spot of white (more restricted in females and young).

*d*¹. Outer surface of wing without lighter markings except a white spot at base of quills, and this sometimes obsolete in females and young.

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[1] *Dendroica dugesi* Coale, Bull. Ridgw. Orn. Club Chic., No. 2, April, 1887, 83. Type, No. 105468, U. S. Nat. Mus. ♂ ad., Moro Leon, Guanajuato; A. Dugès.

[2] *Motacilla petechia* Linn., S. N. ed. 12, i. 1766, 334. *Dendroica petechia* Scl., P. Z. S. 1861, 71.

This species, which inhabits the West Indies at large, is split up into many local races, more or less different from the typical form. The latter belongs to Jamaica. That occurring in Cuba and the Bahamas (and therefore not unlikely to reach occasionally our limits in Florida) is *D. petechia gundlachi* (*D. gundlachi* Baird, Review Am. B. i. 1865, 197).

[3] *Dendroica vieilloti*, var. *bryanti* Ridgw., Am. Nat. vii. Oct. 1873, 606.

Adult male: Above dark dull blue, the back sometimes indistinctly spotted with black; sides of head, chin, throat, chest, sides of breast, and sides, uniform deep black; rest of lower parts white. (*In winter*, upper parts tinged with olive-green, the chin and throat varied, more or less, with white, and white of flanks tinged with brownish.) *Adult female:* Above plain dull olive or grayish green, sometimes tinged with blue; lower parts (including the portions which are black in the male) plain pale greenish buff. *Young:* Above dull brown, the wings (except coverts) and tail as in adults; a dull yellowish white superciliary stripe; below this, sides of head blackish in male, dull grayish brown in female; lower parts yellowish white, more brownish anteriorly. Length 4.70–5.50, wing 2.50–2.65, tail 2.05–2.25. *Nest* on bushes in open coniferous woods, compact, composed of fine dry grasses, spiders' webs, lichens, strips of fine bark, etc., the cavity 1.40 deep by 2.00 across. *Eggs* usually 4, .68 × .49, buffy whitish or greenish white, more or less heavily spotted or blotched with reddish brown. *Hab.* Eastern North America, breeding from northern New England and New York northward, and southward along higher Alleghanies; in winter, Florida, Bahamas, and Greater Antilles; accidental in California (Farallon Islands).

654. **D. cærulescens** (Gmel.).
Black-throated Blue Warbler.

d^2. Outer surface of wings with more or less distinct lighter markings, but without white spot at base of quills.

e^1. Rump yellow.

f^1. Crown with a yellow patch (partly concealed).

g^1. *Adult male:* Lower parts, including chin and throat, white, the chest and sides broadly streaked with black (these streaks sometimes more or less confluent, forming a broken patch), and the sides of the breast with a yellow patch; upper parts bluish gray, becoming blackish on sides of head, which are marked by white supraloral and postocular streaks; back broadly streaked with black; wing with two white bands across tips of middle and greater coverts. *Adult female:* Similar to male, but much duller in color, with markings less conspicuously contrasted. *Winter plumage* (*sexes essentially alike*): Upper parts strongly washed with umber-brown, and lower parts more or less suffused with a paler wash of the same—the pattern of the summer plumage being thereby much obscured; streaks on chest, etc., and yellow patches indistinct. *Young:* No yellow anywhere, except sometimes on rump; whole plumage thickly streaked, above and below, with dusky and grayish white; tail much as in adult. Length 5.00–6.00, wing 2.75–2.85, tail 2.20–2.30. *Nest* usually low down, in coniferous trees. *Eggs* .70 × .53, creamy white, pale creamy buff, or dull white, spotted or blotched, chiefly on or round larger end, with brown and lilac-gray, sometimes mixed with smaller markings of blackish. *Hab.* Whole of North America, but rare west of Rocky Mountains, except along Pacific coast; breeding from northern border of United States northward; wintering from about 40° southward to West Indies and through Middle America to Panama; breeds in Jamaica.

655. **D. coronata** (Linn.). **Myrtle Warbler.**

*g*². Similar to *D. coronata*, but throat yellow, and sides of head dark plumbeous, without the white supraloral and postocular streaks, there being instead a white spot on each eyelid. *Adult male* with middle and greater wing-coverts white, producing a large patch on wing. *Adult female* with chest ashy, more or less spotted with black, the wing with two separated white bands. Length 5.12–6.00, wing 2.85–3.20, tail 2.25–2.55. *Nest* in pine or spruce trees, composed of strips of fine bark, pine-needles, etc., lined with fine roots and hairs and a few soft feathers. *Eggs* .67 × .52, dull olivaceous-white, greenish white, or very pale dull greenish, sparsely spotted and dotted with black, brown, and lilac-gray. *Hab.* Western North America, north to British Columbia, east to eastern base of Rocky Mountains (accidentally to Massachusetts); wintering in valleys of western United States and south through western Mexico to Guatemala.

656. **D. auduboni** (Towns.). **Audubon's Warbler.**

*f*². Crown plain grayish, without yellow spot.

Adult male: Top of head plain bluish gray, lighter around border (the superciliary region whitish); lores and ear-coverts deep black; back black, sometimes mixed with yellowish olive-green; wings black, with a large white patch covering both rows of coverts; lower parts rich gamboge-yellow, the chest and sides boldly striped with deep black. *Adult female:* Similar to male, but colors duller, the back mainly (sometimes entirely) olive-green, wing-coverts with two separated white bands, streaks on lower parts narrower, etc. *Autumnal plumage:* Above olive, becoming grayish on head and greenish on back; throat pale grayish; no streaks across chest. *Young:* Above dull brown, very indistinctly clouded with darker; wings dusky, with two pale dingy yellowish or yellowish white bands across tips of coverts; chest smoky brown, indistinctly streaked with lighter; chin and throat lighter brownish; rest of lower parts pale sulphur-yellow, broadly streaked with dusky, except on belly and under tail-coverts. Length 4.35–5.00, wing 2.25–2.45, tail 1.85–2.05. *Nest* of fine twigs, grass- and weed-stalks, etc., lined with fine black rootlets, in small spruces or hemlocks, 3–35 feet from ground. *Eggs* .63 × .48, creamy white, blotched with rich brown, paler brown, and lilac (sometimes more finely spotted). *Hab.* Eastern North America, west to base of Rocky Mountains, breeding from northern parts of New England, New York, and Michigan to region about Hudson's Bay; in winter, south to Bahamas, Cuba, and eastern Middle America, to Panama.

657. **D. maculosa** (Gmel.). **Magnolia Warbler.**

*e*². Rump not yellow.

- *f*¹. Wing with two distinct white or whitish bands (light brownish in some specimens of *D. vigorsii*).
  - *g*¹. Wing-bands very distinct and decidedly white in all stages (though sometimes tinged with sulphur-yellow).
    - *h*¹. White on inner web of outer tail-feather occupying not more than half the total area of the web.
      - *i*¹. Back usually streaked, never plain bluish gray or ashy; throat never bright yellow.
        - *j*¹. Wing less than 2.75.
          - *k*¹. *Adult male:* Above grayish blue, the back streaked with black, and sides of crown tinged or clouded with same; beneath pure white,

the sides broadly streaked with grayish blue and dusky, and chest crossed by a band of the same (sometimes interrupted in middle). *Adult female:* Above grayish olive-green, glossed with bluish, especially on crown; superciliary stripe (this sometimes obsolete) and lower parts pale greenish yellow or pale greenish buffy, the throat and belly nearly (sometimes quite) white; sides streaked with color of back, but no band across chest. *Young male in first autumn:* Similar to adult female, but whiter beneath and more bluish above. *Young:* Above brownish gray, the crown divided by a median stripe of whitish; sides of head and lower parts white, the first with a narrow dark brownish gray streak through eye. Length 4.00–5.00, wing 2.40–2.70, tail 1.70–1.90. *Nest* in trees in high deciduous woods, 20–50 feet, or more, from ground, compact, cup-shaped, composed of plant-fibres, strips of fine bark, spiders' webs, etc. *Eggs* about .69 × .53, white, or dull greenish white, speckled with brown, chiefly round larger end. *Hab.* Eastern United States (west of Alleghanies) and southern Canada, east to central New York; south, in winter, to western Cuba, Yucatan, and Guatemala, and thence to Colombia, Peru, and Bolivia.

658. **D. cærulea** (Wils.).
Cerulean Warbler.

*k*². *Adult male:* Top of head yellow, bordered laterally with black; ear-coverts, sides of neck, and lower parts pure white, the latter bordered on each side by a broad stripe of rich chestnut extending continuously from sides of neck to flanks; lores and a triangular patch on cheeks (touching the chestnut stripe) black; back striped with black and light olive-grayish, more or less mixed with light olive-yellowish. *Adult female:* Similar to male, but duller, the upper parts more decidedly olive-green (even on crown), the black markings on head indistinct, and chestnut on sides more restricted. *Young in first autumn:* Above bright olive-green, the wing-bands strongly tinged with sulphur-yellow; sides of head and thence backward to flanks plain ash-gray; an orbital ring and median lower parts white. Length 4.60–5.25, wing 2.40–2.65, tail 1.95–2.10. *Nest* in small trees or undergrowth in edge of woods, often near cultivated fields. *Eggs* .65 × .49, white, or creamy white, speckled, chiefly on or round larger end, with rusty brown, madder-brown, and lilac-gray, occasionally mixed with a few smaller black markings. *Hab.* Eastern United States and Canada, breeding north of 40°, except in higher mountains; in winter. south to Bahamas, eastern Mexico, and Central America, as far as Panama...... 659. **D. pensylvanica** (LINN.). **Chestnut-sided Warbler.**

*j*². Wing more than 2.75.

*k*¹. Under tail-coverts pale buff; upper tail-coverts and edges of quills bluish gray. *Adult male:* Top of head chestnut, bordered anteriorly and laterally with black; sides of head dull blackish; sides of neck buff; chin, throat, and sides deep cinnamon or chestnut; rest of lower parts light buff; back streaked with black and grayish. *Adult female:* Above olive, streaked with black (crown sometimes tinged or streaked with chestnut); beneath buffy, the sides (especially of breast) more or less tinged with rusty, the throat also sometimes tinged with same. *Young male in first autumn:* Above olive-green, streaked, especially on back, with black; rump and upper tail-coverts grayish, similarly streaked; lower parts pale buffy, tinged with olive laterally, the flanks strongly tinged with rusty or pale chestnut. *Young female in first autumn:* Similar to male, but plain olive-green above (the back sometimes indistinctly streaked), and flanks usually without distinct rusty tinge. Length 5.00–6.00, wing 2.75–3.00, tail 2.15–2.25. *Nest* in hemlock or other coniferous trees, 15–20 feet from ground. *Eggs* .71 × .51, white, finely speckled on or round larger end with brown. *Hab.* Eastern North America, breeding from northern New England and northern Michigan to Hudson's Bay; in winter, south through eastern Mexico and Central America to Colombia.. 660. **D. castanea** (Wils.).

Bay-breasted Warbler.

k^2. Under tail-coverts pure white; upper tail-coverts and edges of quills olive or olive-green. *Adult male:* Top of head uniform glossy

black; back streaked with black, grayish, and grayish white; sides of head and lower parts white, the sides and flanks broadly streaked with black, and sides of throat with a series of blended black streaks, converging to an angle on chin. *Adult female:* Above olive or olive-grayish, everywhere streaked with black; beneath white (usually tinged with olive-yellowish anteriorly), and streaked laterally with dusky. *Young in first autumn:* Like corresponding stage of *D. castanea*, but under tail-coverts pure white, upper tail-coverts and edges of quills olive or olive-greenish, and lower parts rather olive-yellowish, or dirty sulphur-yellow, than buffy. *Young:* Above dull grayish, everywhere streaked with black; beneath dull white, everywhere spotted with black, the spots triangular on breast, etc., but assuming a transverse shape on flanks and belly. Length 5.00–5.75, wing 2.80–2.90, tail 2.05–2.25. *Nest* on lower branches of coniferous trees (farther north often on ground), rather bulky, warmly lined with soft feathers. *Eggs* .72 × .53, white, creamy white, or light creamy buff, spotted, speckled, or blotched (often wreathed) with brown and lilac-gray, sometimes mixed with a few small black specks. *Hab.* Eastern and northern North America, breeding from northern New England, Labrador, etc., to coast of Alaska (north of the peninsula) and of Arctic Ocean; accidental in Greenland;

in winter, south to Bahamas, Cuba, and northern South America (but not recorded from any portion of Middle America).

661. **D. striata** (Forst.).
Black-poll Warbler.

i^2. Back plain bluish gray or ash-gray; throat bright yellow. (*Adult—sexes alike:* Above plain bluish gray, becoming black on forehead or sides of crown, or both; a superciliary stripe, sides of neck, broad wing-bands, and lower parts posterior to chest, pure white; chin, throat, and chest, sometimes also anterior portion of superciliary stripe, pure gamboge-yellow; lores and large triangular patch covering cheeks and ear-coverts, enclosing white spot on lower eyelid, deep black; sides and flanks broadly streaked with black. *Young in first autumn:* Essentially like adult, but gray of upper parts and white of lower parts much tinged with brown, black markings of head, etc., less distinct, and yellow of throat paler.)

j^1. Larger, with relatively longer bill; superciliary stripe usually distinctly yellow anteriorly; length 4.70–5.75, wing 2.45–2.75 (2.62), tail 2.00–2.30 (2.13), exposed culmen .42–.55 (.49). *Nest* usually (?) placed upon branches of pine trees; "externally 2.80 inches in diameter by 1.70 in depth; internally 1.77 in diameter by 1.30 in depth," composed of strips of bark, small twigs, plant-down, etc.; not unfrequently concealed within pendent tufts of "Spanish" moss. *Eggs* .69 × .52, dull greenish white or grayish white, spotted, chiefly round larger end, with various shades of umber-brown and lilac-gray. *Hab.* Southern Atlantic States, north, regularly, to Maryland (near seacoast), casually to New York, Massachusetts, etc.; in winter (only?)

south to Bahamas, Cuba, Hayti, and Jamaica.. 663. **D. dominica** (Linn.)
Yellow-throated Warbler.

*j*². Smaller, with relatively shorter bill; superciliary stripe usually entirely (?) white; length 4.50–5.50, wing 2.50–2.70 (2.57), tail 2.00–2.20 (2.09), exposed culmen .40–.49 (.45). *Hab.* Mississippi Valley, north to the Great Lakes; south, in winter, to Gulf States, Mexico (both coasts), Yucatan, Honduras, and Guatemala.
663*a*. **D. dominica albilora** Baird.
Sycamore Warbler.

*h*². White on inner webs of outer tail-feathers occupying more than half the total area of the web (in adult males of some species occupying almost the whole of inner web).

*i*¹. Throat yellow or orange, without admixture (superficial or concealed) of black.

*j*¹. Crown with a central spot of yellow or orange (indistinct in young).

Adult male: Top of head (except crown-spot), hind-neck, streak across lores, ear-coverts, and general color of upper parts, deep black; rest of head, including chin, throat, and chest, pure cadmium-orange, most intense on throat and chest; rest of lower parts pale yellow, or yellowish white, the sides streaked with black; back streaked with whitish and grayish; wing with a large white patch covering both rows of coverts. *Adult female:* Similar to male, but the black portions replaced by grayish brown, streaked with dusky (ear-coverts plain grayish brown), orange paler, and posterior lower parts white. *Young male in first autumn:* Similar to adult female, but darker above, wing with two white bands, and posterior lower parts pale yellow. *Young female in autumn* similar to male, but paler and duller in color, the upper parts more brown, with crown-spot nearly obsolete, the throat, etc., sometimes pale buffy and streaks on sides dull grayish brown. Length 4.25–5.50, wing 2.50–2.80, tail 1.90–2.10. *Nest* in evergreen trees, rather bulky, composed of downy materials, especially down of the cat-tail (*Typha latifolia*), lined with fine lichens, horse-hairs, etc.; 4.92 across by 1.65–2.16 deep outside, the cavity 2.16 wide by 1.14 deep. *Eggs* .68 × .50, greenish white, or very pale bluish green, speckled or spotted, chiefly on or round larger end, with brown or reddish brown and lilac-gray. *Hab.* Eastern North America (west, casually, at least, to Utah and New Mexico), breeding from more northern United States northward; accidental in Greenland; in winter, south through Bahamas, eastern Mexico and Central America to Venezuela, Colombia, Peru, etc.

662. **D. blackburniæ** (Gmel.).
Blackburnian Warbler.

j^2. Crown without trace of central yellow spot. (*Adult—sexes alike:* Above, including ear-coverts and sides of neck, ash-gray, the crown and back narrowly streaked with black; superciliary stripe, spot on lower eyelid, malar region, chin, throat, and chest, gamboge-yellow; rest of lower parts white, the sides streaked with black.)

k^1. Larger, with superciliary stripe extended beyond the eye, the posterior portion lighter yellow or even sometimes white; yellow of chest ending rather abruptly; wing-bands broader. *Young:* Above uniform dull grayish brown, without streaks either on head or back; lower parts entirely dull grayish, the breast and sides streaked with dusky; no distinct markings about head. Length 4.90–5.25, wing 2.40–2.70, tail 2.10–2.30. *Hab.* Southern Arizona and New Mexico, and south into Mexico.

664. **D. graciæ** Coues. **Grace's Warbler.**

k^2. Smaller, with superciliary stripe not continued beyond posterior angle of eye, and wholly rich yellow; yellow of chest extended over breast, where fading gradually into the white; wing-bands narrower; length about 4.00–4.50, wing 2.20, tail 1.80–1.90. *Hab.* Southern Mexico (Zapotitlan), Honduras, and Guatemala.

D. decora (Ridgw.). **Decorated Warbler.**[1]

i^2. Throat entirely black in adult males, mixed black and yellow, or black and white, in adult females and young males (rarely white or yellow without any superficial black in immature females).[2]

j^1. Sides of head white and black, or white and dull grayish.

Adult male: Top and sides of head, chin, and throat deep black; broad stripe above ear-coverts, broad malar stripe (widening behind), and lower parts, pure white; sides broadly streaked with black; a yellow spot or streak above lores; upper parts bluish gray, the back streaked with black. *Adult female:* Similar to male, but colors duller, and black of throat more or less mixed with white (the latter sometimes prevailing). *Young in first autumn:* Essentially like adults, but upper parts much tinged with brown, the top of head grayish like back (sometimes streaked with black), back with black streaks indistinct or concealed, and throat sometimes entirely white superficially. *Young:* Above plain dull brownish gray; lower parts plain dull gray anteriorly, white posteriorly. Length 4.70–5.40, wing 2.35–2.65, tail 2.15–2.35. *Eggs* .61 × .50, white, pinkish white, or creamy white, spotted or speckled, chiefly on or round larger end, with reddish brown and lilac-gray, usually mixed with a few darker specks. *Hab.* Western United States, in mountains, north to Colorado, Oregon, etc.; south, in winter, into Mexico, as far as Oaxaca, Guanajuato, and Orizaba.. 665. **D. nigrescens** (Towns.). **Black-throated Gray Warbler.**

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[1] *Dendroica graciæ,* var. *decora* Ridgw., Am. Nat. vii. 1873, 608. *Dendrœca decora* Salv. & Godm., Biol. Centr.-Am., Aves, i. 1881, 136, pl. x., fig. 1.

[2] In such, the feathers of the throat are always dusky at base, and there is a conspicuous superciliary stripe of yellow or white, in the latter case yellow anteriorly.

*j*². Sides of head yellow and black or yellow and olive.

*k*¹. Sides broadly streaked with black; black of chest extending farthest back on sides.

*l*¹. Breast white, or merely tinged with yellow; ear-coverts at least partially yellow, never uniform black or deep olive, strongly contrasted with yellow of adjacent parts.

(83.) *m*¹. Upper parts with more or less of black (in adult male entirely black); breast and belly pure white; scapulars black or ash-gray. *Adult male:* Above black, the feathers of back usually edged with olive-green. *Adult female* not seen, and has not been described; but probably much like the male, with greater admixture of olive-green on upper parts and with black of throat more or less broken by admixture of yellow. *Young in first autumn:* Above olive-green, slightly mixed with blackish; scapulars and upper tail-coverts ash-gray, the latter with black centres; chin whitish; upper throat yellow, lower throat and chest grayish white superficially, but black beneath surface. Length about 4.50–5.20, wing 2.50, tail 2.05–2.20. *Nest* usually in red cedar trees, 10–20 feet up, composed of strips of inner bark of red cedar, fastened together with spiders' webs, lined with hair and feathers; placed between upright branches; cavity, 1.50–1.60 across by 1.50–2.00 deep. *Eggs* .75 × .55, white, sprinkled, speckled, or spotted with reddish brown, sometimes mixed with pale lavender. *Hab.* Central Texas, and south to highlands of Guatemala...... 666. **D. chrysoparia** Scl. & Salv. **Golden-cheeked Warbler.**

*m*². Upper parts (*i.e.*, top of head, hind-neck, back, scapulars, rump, and upper tail-coverts) without any black (except, rarely, a few inconspicuous streaks); breast and belly usually yellowish white (rarely pure white), the former sometimes strongly tinged with yellow. *Adult male:* Above bright olive-green; sides of head pure gamboge-yellow, relieved by an olivaceous streak through eye, and, usually, more or less of olive on ear-coverts; throat and chest "solid" black. *Adult female:* Similar to the male, but black of throat and chest more or less broken by yellowish and whitish tips to feathers, the chin and upper throat sometimes entirely yellow or yellowish white superficially (rarely, nearly the whole throat and chest yellow or yellowish white). *Young in first autumn:* Similar to adult female, but more tinged with yellow below, and with black on throat and chest usually almost wholly concealed. Length 4.35–5.40, wing 2.40–2.55, tail 1.90–2.05. *Nest* in trees, usually at considerable height. *Eggs* .67 × .49, white, or creamy white, spotted with reddish brown and lilac-gray, mixed with a few darker specks. *Hab.* Eastern North America, breeding from northern United States northward; casual in Greenland; in winter, south through eastern Mexico and Central America to Panama; also to Cuba, Jamaica, and Dominica.

667. **D. virens** (Gmel.).

Black-throated Green Warbler.

l^2. Breast bright yellow, like sides of head; ear-coverts entirely black or deep olive, very strongly contrasted with yellow of adjacent parts.

Adult male: Whole top of head, broad stripe on side of head, and patch covering chin, throat, and upper part of chest, uniform deep black; broad superciliary stripe, broader malar stripe, and whole breast, rich gamboge-yellow; belly and under tail-coverts white, the latter, also sides and flanks, broadly streaked with black; back, scapulars, and rump olive-green, more or less conspicuously spotted, or broadly streaked, with black. *Adult female:* Similar to male, but black of head more or less mixed with olive-green, and that of throat and chest more or less broken by yellow tips to feathers (sometimes almost entirely concealed). *Young in first autumn:* Similar to adult female, but yellow paler, olive of upper parts almost (sometimes quite) plain (top of head always streaked, however?), and throat and chest entirely yellow superficially in some females. Length 4.90–5.30, wing 2.45–2.70, tail 2.00–2.20. *Nest* in coniferous trees. *Eggs* .61 × .51, buffy white, speckled round larger end with brown, black, and lilac-gray. *Hab.* Western North America (chiefly near Pacific coast), north to Sitka, east, during migrations, to Rocky Mountains (casually to Pennsylvania); in winter, from southern California to Guatemala.

668. **D. townsendi** (NUTT.). **Townsend's Warbler.**

k^2. Sides without distinct streaks (except, sometimes, in young); black of throat scarcely extending over chest, and with a decidedly convex posterior outline.

Adult male: Top and sides of head gamboge-yellow, the occiput (sometimes crown also) spotted with black; chin and throat black; rest of lower parts white, usually somewhat tinged with grayish on sides; back, scapulars, and rump gray, broadly streaked or spotted with black, this prevailing on back and usually quite uniform on hind-neck. *Adult female:* Similar to male, but black of throat more or less broken or mixed with yellow, yellow of head duller, top of head more profusely spotted with black, and black markings of upper parts much less extensive, the gray decidedly predominating. *Young in first autumn:* Top of head olive superficially, but feathers yellow beneath surface; sides of head tinged with olive; chin and throat brownish white superficially, but black or dusky grayish immediately beneath surface; back, etc., dull grayish brown or grayish olive, usually more or less streaked, narrowly, with dusky; white of lower parts tinged with brownish, especially on sides. *Young:* Above plain ash-gray; beneath plain brownish gray, the belly and lower tail-coverts white. Length 4.70–5.25, wing 2.45–2.70, tail 2.10–2.25. *Nest* in coniferous trees. *Eggs* .61 × .51, dull white, or grayish white, spotted or blotched with hair-brown, umber, and lilac-gray. *Hab.* Western United States, chiefly near Pacific coast, east during migrations to Rocky Mountains; south, in winter, to highlands of Guatemala.

669. **D. occidentalis** (TOWNS.). **Hermit Warbler.**

*g*². Wing-bands distinct only in adult male, and dull white or grayish white; in females and young less distinct, and more decidedly grayish.

Adult male: Above plain bright olive-green, including sides of head and neck; wings and tail dusky grayish, with paler grayish edgings, the former with two broad dull white or grayish white bands, the latter with much white on terminal portion of inner webs of two outer feathers; streak over lores, eyelids, chin, throat, chest, and breast (sometimes belly and flanks also), gamboge-yellow, the sides of breast more or less distinctly streaked with olive-green; lower tail-coverts (usually lower belly and hinder flanks also) dull white. *Adult female:* Above dull olive-gray or grayish olive, the wings and tail much as in male, but bands on former narrower and more decidedly grayish; beneath soiled grayish white, the breast usually more or less tinged with yellow, or with anterior half of lower surface pale yellow, more or less streaked with olive. *Male in winter* with yellow richer and upper parts browner than in summer. *Female in* *winter* grayish brown above, brownish buffy white beneath (usually tinged with yellow on breast. *Young:* Above plain dull brownish; beneath pale dull grayish brown, or brownish white; wing-coverts edged with light brownish. Length 4.95–5.60, wing 2.70–3.00, tail 2.10–2.45. *Nest* in trees in high woods, usually at considerable height. *Eggs* .69 × .53, dull white, grayish white, or dull purplish white, speckled or spotted with madder-brown and lilac-gray, usually most heavily round larger end. *Hab.* Eastern United States, north to Ontario and New Brunswick; wintering in more southern States and Bahamas; Bermudas.

671. **D. vigorsii** (AUD.). **Pine Warbler.**

*f*². Wing without any distinct white bands.

*g*¹. Back conspicuously streaked with black.

Adult male: Upper parts, including sides of head and neck, bluish gray or plumbeous, the back more brownish gray, and broadly streaked with black; wings and tail black, with brownish gray edgings; lores and narrow frontal band black; a white spot on each eyelid; lower parts plain yellow (varying in tone from "primrose" to "King's" yellow), fading into white on chin and under tail-coverts, the sides streaked with black. *Adult female:* Essentially like male, but gray of head, neck, rump, etc., much duller, lores dull grayish, and yellow of lower parts paler, the chest sometimes (in younger specimens?) sparsely speckled with dusky. *Young in first autumn:* Similar to adult female, but above everywhere decidedly browner gray, lores light brown or grayish, lateral lower parts tinged with brown, and the chest always (?) speckled with dusky. Length about 5.30–6.00, wing 2.60–2.90, tail 2.25–2.50. *Hab.* Eastern United States (Ohio, Michigan, Wisconsin, Minnesota, Missouri, etc.), during migrations, Bahamas, in winter; summer residence unknown.

670. **D. kirtlandi** (BAIRD). **Kirtland's Warbler.**

g^2. Back without black streaks.

h^1. Above ash-gray, including sides of head, the latter without distinct markings: under tail-coverts and belly white.

Adult male: Forehead and crown olive-green; rest of upper parts, including sides of head and neck, plain ash-gray, the wings with two dull grayish white bands; throat and chest pale yellow, this bordered laterally by an interrupted series of black streaks, most distinct on sides of breast; rest of lower parts white, shading into grayish on sides; length (skin) about 4.50, wing 2.30, tail 2.20, tarsus .66. *Hab.* Cuba.

D. pityophila (GUNDL.).
Cuban Pine Warbler.[1]

h^2. Above olive-green or brownish (always olive-green on rump and upper tail-coverts, at least), the sides of head with distinct yellow or whitish markings; under tail-coverts or belly (or both) yellow.

$i.^1$ Above plain olive-green, the back spotted chestnut in adult male; inner web of outer tail-feather with more than terminal third white, this with anterior outline very oblique.

Adult male: Superciliary stripe, spot beneath eyes, and entire lower parts rich gamboge-yellow; streak across lores, a broader one across cheeks, from corner of mouth, and broad streaks along sides, deep black. *Adult female:* Essentially like male, but much duller, the chestnut on back obsolete or indistinct, yellow paler, and black markings less distinct (sometimes replaced by dull grayish ones). *Young in first autumn:* Similar to adult female, but tinged with ashy about head, where the yellow markings sometimes incline to whitish. *Young:* Above

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[1] *Sylvicola pityophila* GUNDL., Ann. N. Y. Lyc. Oct. 1855, 160. *Dendroica pityophila* BAIRD, Review, i. 1865, 208.

dull brownish gray, the wing-coverts tipped with light buffy; chin and throat whitish; rest of lower parts yellowish white, the chest and sides streaked with color of back, this nearly uniform on chest. Length 4.25–5.00, wing 2.10–2.30, tail 1.90–2.10. *Nest* in bushes or small trees (often in young cedars) in open situations. *Eggs* .63 × .47, white or buffy white, speckled, chiefly on or round larger end (often wreathed), with burnt-umber or vandyke-brown and lilac-gray. *Hab.* Eastern United States, north to Michigan and southern New England; in winter, southern Florida, Bahamas, and most of West Indies... 673. **D. discolor** (Vieill.).
Prairie Warbler.

i^2. Above olive-brown, passing into olive-green on rump and upper tail-coverts, the back narrowly streaked with darker; top of head chestnut in adults; tips of wing-coverts paler than general color, but not forming obvious bands; a continuous superciliary stripe of yellow or dull whitish; inner web of outer tail-feather with less than terminal third white, this with anterior outline only moderately oblique (often nearly transverse). (Winter adults with chestnut of crown obscured or even sometimes concealed by brownish tips to feathers; immature birds with chestnut wanting, the crown dull grayish brown or olive-brown, streaked with dusky.)

j^1. Smaller and much duller colored, with bright or continuous yellow of lower parts confined to throat, chest, and under tail-coverts in adult, to the latter alone in immature birds; middle portion of lower parts (belly, etc.) mixed yellow and dull whitish, the latter usually prevailing; *immature birds* with superciliary stripe and lower parts (except under tail-coverts) dull whitish (sometimes slightly tinged with yellow), the chest and sides streaked with grayish brown. Length 4.50–5.50, wing 2.35–2.65 (2.52), tail 2.05–2.45 (2.24), tarsus .71–.80 (.76). *Hab.* Interior of North America, north to Great Slave Lake in summer (southern breeding limit unknown); migrating south through Mississippi Valley to Gulf States, Florida, Bahamas, and Greater Antilles; occasional (or casual) during migrations, east of Alleghanies .... 672. **D. palmarum** (GMEL.). **Palm Warbler.**

*j*². Larger, and much more brightly colored, with entire lower parts bright yellow in all stages (except nestling plumage); upper parts richer or less grayish olive than in true *palmarum.* *Young:* Above dull grayish brown and olive, broadly streaked with blackish; wing-coverts narrowly tipped with light brown; lower parts dull whitish, broadly streaked with dusky, the under tail-coverts gamboge-yellow. Length 4.90–5.75, wing 2.50–2.80 (2.69), tail 2.25–2.55 (2.43), tarsus .75–.80 (.79). *Nest* on ground, in open situations. *Eggs* .67 × .52, buffy white, speckled on larger end with brown and lilac-gray. *Hab.* Atlantic coast of North America, breeding from New Brunswick and Nova Scotia to Hudson's Bay; in winter, southward east of Alleghanies to Florida, and thence westward to Louisiana. (Not yet found in Bahamas or other portions of West Indies.[1])...... 672*a*. **D. palmarum hypochrysea** RIDGW. **Yellow Palm Warbler.**

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[1] The very distinct winter range of the two races of Palm Warbler shows the necessity of recognizing such geographical forms. The National Museum possesses specimens of true *D. palmarum* from Cuba, Haiti, and

GENUS **SEIURUS** SWAINSON. (Page 482, pl. CXVII., fig. 3.)

Species.

COMMON CHARACTERS.—Above plain dusky, brownish, or olive, the top of the head, in one species, striped with blackish and orange-rufous; lower parts white, streaked with brown or dusky. *Nest* on ground or in hollow stumps or logs near ground, well hidden, very bulky, loosely put together, the exterior composed of dead leaves, etc., the lining of fine rootlets, grasses, etc. *Eggs* 3–6, pure white or creamy white, spotted with reddish brown and lilac-gray.

a^1. Top of head with two lateral stripes of blackish, enclosing a median one of orange-rufous; no white superciliary stripe, but with a distinct whitish orbital ring. *Adult:* Above greenish olive, beneath pure white, the breast and sides streaked with dusky or black. *Young:* Above fulvous brown, the wing-coverts tipped with lighter fulvous, or buffy; lower parts pale fulvous, or buffy, very narrowly streaked on breast, etc., with dusky; stripes on top of head very indistinct, or obsolete. Length about 5.40–6.50, wing 2.75–3.00, tail 2.00–2.25. *Nest* in dry woods, embedded in ground, well concealed, the top usually roofed over or covered, the entrance more or less to one side. *Eggs* .80 × .61. *Hab.* Eastern North America, north to Hudson's Bay and Alaska, breeding from 38°, or lower, northward; west to eastern base of Rocky Mountains; south, in winter, to southern Florida, West Indies (including Bahamas), Mexico (both sides), and Central America, nearly to Panama.

674. **S. aurocapillus** (LINN.). **Oven-bird.**

a^2. Top of head plain brown, or dusky, like back (sometimes with indication of a paler median streak anteriorly); a distinct whitish or pale fulvous superciliary stripe; with a dusky or brownish stripe beneath it, through eye; no whitish orbital ring.

b^1. Superciliary stripe more or less fulvous; streaks on lower parts darker than upper surface; throat always (?) distinctly speckled; longer under tail-coverts with nearly whole of concealed portion (both webs) brownish or dusky; lower parts never tinged with buffy laterally or posteriorly, but often uniformly tinged with sulphur-yellow; wing exceeding tail by a little less than length of tarsus. *Young:* Similar to adult, but feathers

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Jamaica, and has received in one collection from the Bahamas more than fifty specimens, representing most of the islands in the group; yet every one in this large series, and also among those from Key West, is absolutely typical. *D. hypochrysea* has not yet been traced farther south than Hibernia, northern Florida, its winter range being apparently restricted to the southern Atlantic and Gulf States. It would thus appear that the respective migrations of the two forms intersect, though it may be that both occur together, to some extent, during winter. The only examples of *D. hypochrysea* I have seen from any locality west of the Atlantic coast (an adult and a young of the year from "Mississippi River, Louisiana," February 5 and 21, 1870, in Mr. Henshaw's collection) are in every respect typical of that form.

of upper parts tipped with light fulvous, producing a spotted appearance, and streaks on lower parts much less distinct than in adult.

c^1. Smaller, browner above, superciliary stripe usually more distinctly fulvous, and lower parts usually distinctly yellowish; length 5.00–6.00, wing 2.80–3.10 (2.94), tail 2.00–2.25 (2.14), exposed culmen .43–.50 (.47), tarsus .80–.88 (.83). *Nest* on or near ground in wet woods or on border of swamps, open above. *Eggs* .75 × .57. *Hab.* Eastern North America, breeding from northern United States northward; west to Mississippi Valley (but chiefly east of Alleghanies ?), south, in winter, to Gulf States, West Indies, and northern South America.. 675. **S. noveboracensis** (GMEL.). **Water-Thrush.**

c^2. Larger, darker and sootier above, superciliary stripe less distinctly fulvous, and lower parts much less often distinctly yellowish; length 5.50–6.50, wing 2.90–3.25 (3.14), tail 2.10–2.50 (2.35), exposed culmen .44–.55 (.51), tarsus .82–.90 (.87). *Hab.* Western North America (chiefly in the interior), north to Alaska, east to Mississippi Valley (as far as western Indiana, Illinois, etc.); south, in winter, to Lower California, Mexico, and Central America.
675*a*. **S. noveboracensis notabilis** (GRINN.).
Grinnell's Water-Thrush.

b^2. Superciliary stripe white; streaks on lower parts not darker than upper surface; throat usually immaculate; longer under tail-coverts entirely white or pale buff, or else with only the basal portion of one web brownish; lower parts always more or less tinged with buff laterally and posteriorly, but never with sulphur-yellow; wing exceeding tail by more than length of tarsus.

Above grayish brown, rather lighter and more olivaceous (or less brownish) than in *S. nævius;* superciliary stripe and lower parts white, the latter changing to buffy posteriorly and laterally; breast, sides, and flanks broadly streaked with the color of the back. *Young:* Similar to adult, but upper parts browner, wing-coverts tipped with dull rusty, and streaks on lower parts much less distinct (nearly obsolete) on sides and flanks. Length 5.75–6.40, wing 3.00–3.25 (3.15), tail 2.10–2.30 (2.15), exposed culmen .50–.56 (.53), tarsus .87–.91 (.89). *Nest* a bulky structure of dried leaves, fine rootlets, grasses, etc, carefully hidden in crevices among roots of upturned trees, old logs, stumps, or mossy banks—always in moist or swampy woods. *Eggs* .73 × .59. *Hab.* Eastern United States, north to the Great Lakes and southern New England, west to Great Plains; in winter, from Gulf States to West Indies, eastern Mexico, and Central America.... 676. **S. motacilla** (VIEILL.). **Louisiana Water-Thrush.**

GENUS **GEOTHLYPIS** CABANIS. (Page 482, pl. CXVII., figs. 4–7.)

Species.

COMMON CHARACTERS.—Above plain olive or olive-green, the head usually more or less different in color; beneath yellow, the anterior portions sometimes grayish or blackish, and belly sometimes whitish; adult males of some species with black patch on sides of head. *Nest* on or near ground, among bushes or weeds. *Eggs* white, speckled, more or less, with brownish.

a^1. Bill slender, little if any deeper than broad, its greatest depth much less than half its length from nostril, the culmen only slightly or moderately curved.

b^1. Tail decidedly shorter than wing, with more than the basal half concealed by the coverts; first quill longer than fifth (sometimes longest); outstretched feet reaching nearly (sometimes quite) to end of tail. (Subgenus *Oporornis* BAIRD.)

c^1. Entire lower parts pure gamboge-yellow; forehead and sides of head black, with a bright yellow superciliary stripe, involving hinder as well as upper border of eye; feathers of crown tipped with slate-gray. (Sexes alike in color.)

Adult: Above plain bright olive-green (except as described above), beneath continuous pure gamboge-yellow; *in winter*, similar, but gray tips to feathers on top of head more tinged with brown, and black on side of head somewhat obscured by grayish brown tips to the feathers. *Young:* Above olive-brown (including top and sides of head), the back and scapulars more decidedly brown; wing-coverts tipped with light tawny brown; wings otherwise, and tail, as in adult; beneath plain light dull olive, paler and more yellowish posteriorly; no black nor yellow on sides of head. Length 5.00–5.85, wing 2.55–2.80, tail 1.90–2.20, tarsus .80–.90. *Nest* a very bulky structure of dried leaves, etc., lined with fine (usually black?) rootlets, on ground, in woods. *Eggs* .72 × .56, white, or creamy white, speckled or spotted with brown, reddish brown, and lilac-gray. *Hab.* Eastern United States (chiefly west of Alleghanies), north to Great Lakes and southern New England; in winter, south to Cuba, and through eastern Mexico and Central America to Panama.

677. **G. formosa** (WILS.). **Kentucky Warbler.**

c^2. Only the breast, belly, and under tail-coverts pure yellow, the chin, throat, and chest grayish (sometimes mixed with black) in adult males, light grayish, dull light smoky buff, or dingy yellowish in adult females and immature birds; no yellow on sides of head, nor black on top or sides of head, except sometimes on lores. (Sexes decidedly different in color.)

*d*¹. Wing 2.65, or more, and exceeding length of tail by at least two-thirds the length of the tarsus.

Adult male: Head, neck, and chest ash-gray, darkest on chest and top of head; a continuous white orbital ring; rest of lower parts pale yellow. *Adult female:* Top of head grayish olive, sides of head more grayish; chin and throat brownish white or dull light buffy, deepening into grayish brown or brownish gray on chest; orbital ring brownish white; otherwise like male. *Young in first autumn:* Similar to adult female, but more tinged with brownish. Length 5.20–6.00, wing 2.65–3.00, tail 1.90–2.20, tarsus .75–.90. *Nest* on ground, in swampy woods, very compact. *Eggs* .76 × .54, colored much like those of *G. formosa* and *G. philadelphia.* *Hab.* Eastern North America, breeding chiefly (entirely?) north of United States; winter residence unknown.

678. **G. agilis** (Wils.). **Connecticut Warbler.**

*d*². Wing not more than 2.55, and exceeding length of tail by less than half the length of the tarsus.

*e*¹. No white on eyelids (except sometimes a slight indication in females or immature birds). *Adult male:* Head, neck, and chest deep ash-gray, the throat and chest more or less mixed with black, this often forming a distinct patch posteriorly; lores dusky or dusky grayish; rest of lower parts pure gamboge-yellow. *Adult female:* Similar to male, but chin and throat dull whitish or brownish white (sometimes tinged with yellow), the chest dull ash-gray or grayish brown (sometimes inclining to dull yellowish); rest of head and neck dull gray, brownish gray, or olive. *Young in first autumn:* Similar to adult female, but more tinged with brownish, the throat and chest more suffused with yellowish. Length 4.90–5.75, wing (male) 2.30–2.55 (2.42), tail 2.00–2.25 (2.13), tarsus .79–.84 (.81); female somewhat smaller (wing 2.15–2.50, tail 1.80–2.05). *Nest* on or near ground, in woods. *Eggs* .71 × .54, colored like those of *G. formosa* and *G. agilis.* *Hab.* Eastern North America, breeding from higher Alleghanies, New York, New England, Michigan, etc., northward; in winter, south to Costa Rica and Colombia (but not Mexico or West Indies); accidental in Greenland.

679. **G. philadelphia** (Wils.). **Mourning Warbler.**

*e*². A distinct white spot on each eyelid, in both sexes. *Adult male:* Similar to same sex of *G. philadelphia*, but lores deep black, in conspicuous contrast with the gray, feathers of throat and chest margined with paler gray, and chest without black patch. *Adult female* and *immature birds* similar to corresponding stages of *G. philadelphia*, but eyelids with a distinct whitish mark. Length 5.00–5.75, wing (male) 2.30–2.50 (2.38), tail 2.10–2.55 (2.28), tarsus .80–.87 (.85); female somewhat smaller (wing 2.25–2.30, tail 2.10–2.30). *Nest* near ground, in clumps of weeds, often in open places, in mountains. *Eggs* .71 × .53, white, or buffy white, speckled on larger end with dark brown and lilac-gray, often mixed with a few fine black "pen-lines," and sometimes touched with rusty stains. (Much like eggs of *G. trichas.*) *Hab.* Western North America (chiefly in mountains) north to British Columbia; in winter, south through whole of Mexico and Central America to Panama.

680. **G. macgillivrayi** (AUD.). **Macgillivray's Warbler.**

*b*². Tail not decidedly shorter than wing (often longer), with less than basal half concealed by the coverts; first quill shorter than fifth (often shorter than sixth); outstretched feet falling far short of tip of tail. (Subgenus *Geothlypis.*)

*c*¹. Bill only moderately slender and acute (sometimes decidedly stout); black mask of adult male not extending over crown, and always bordered posteriorly by ashy, whitish, or yellow; legs and feet light brown or pale horn-color.

*d*¹. Exposed culmen less than .52; bill slender, scarcely, if at all, deeper than broad at base, the culmen nearly straight or only slightly curved.

*e*¹. Tarsus not more than .85; exposed culmen less than .48; adult male with black mask bordered behind by ashy or white. (*Adult females* without any black, ashy, or white about head, the whole top and sides of head being grayish brown or olive, often tinged with reddish brown on crown; yellow of lower parts paler and usually more restricted than in male, nearly the whole lower surface sometimes dull yellowish white. *Adult male in winter* same as in summer, but more or less washed with brown above, especially on top of head, the black of mask somewhat obscured by slight brownish or light-colored tips to feathers, and light grayish or whitish border more or less concealed by brown tips. *Young male in first winter* similar to adult, but mask much less distinct, often merely indicated. *Young:* Plain olive above, pale olive-yellowish beneath.)

*f*¹. Lower parts not entirely yellow, the anal region, at least, buffy whitish, and flanks either dull buffy whitish or brownish, distinctly different from color of belly; wing less than 2.40.

g^1. Smaller, and duller in color; the whole belly and sides buffy whitish, the bright yellow being confined to chin, throat, chest, breast, and under tail-coverts; black mask bordered posteriorly by a band (usually narrow) of light ash-gray; length 4.40–5.65, wing 1.90–2.20 (2.04), tail 1.85–2.20 (2.04), exposed culmen .38–.42 (.40), tarsus .71–.80 (.77). *Nest* on or near ground, supported between weed- or coarse sedge-stalks, deeply cup-shaped, usually with a deep foundation of dried leaves. *Eggs* .70 × .52, white, finely speckled on larger end with dark brown and black, sometimes with a few larger spots, or "pen-lines," or both. *Hab.* Eastern United States (chiefly east of Alleghanies?), north to Canada and Nova Scotia; in winter, southern Atlantic (and Gulf?) States, Bahamas, Greater Antilles, eastern Mexico, and Central America, as far as Panama.... 681. **G. trichas** (LINN.). **Maryland Yellow-throat.** (84.)

g^2. Larger, and brighter-colored, the lower parts entirely bright yellow except anal region and flanks; black mask bordered posteriorly by a band (usually broad) of white or grayish white; yellow of throat, etc., richer, and olive-green of posterior upper parts more yellowish; length 4.75–5.85, wing 2.10–2.40 (2.24), tail 2.15–2.40 (2.24), exposed culmen .40–.45 (.42), tarsus .75–.83 (.80). *Nest* and *eggs* as in *G. trichas*, the latter averaging about .67 × .53. *Hab.* Western United States, east to Mississippi Valley (and Georgia?); in winter, more southern United States (chiefly west of the Mississippi) and south through western and central Mexico.... 681*a*. **G. trichas occidentalis** BREWST. **Western Yellow-throat.**[1]

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[1] While there is no difficulty in distinguishing at a glance specimens from the region west of the Great Plains from those obtained along the Atlantic coast, it is a very difficult matter to refer satisfactorily specimens from the intermediate region. This arises from the fact that the latter are, as a rule, intermediate in character, occasional examples being more like one extreme than the other, as the case may be. The majority of specimens from the Mississippi Valley are more like *occidentalis* in the greater extent and richness of the yellow of the lower parts, but more like *trichas* in the decided ashy tint bordering the black mask; some, however, are not distinguishable in the latter respect from typical *occidentalis* from Arizona and other far western localities. It is very difficult in many cases to determine satisfactorily winter specimens, which necessarily include a large proportion of young birds, and on this account the winter range of the two forms as given above will probably require some modification. The measurements given above are in the case of *trichas* taken from 19 adults from the Atlantic coast of the United States, and for *occidentalis* from 18 specimens all representing localities west of the Great Plains. Measurements of 20 adults from the Mississippi Valley give the following results:

f^2. Lower parts entirely bright yellow, the flanks not very different in color from belly; wing not less than 2.40 (?).

Adult male otherwise similar to that of *G. trichas occidentalis*, but olive-green of upper parts decidedly richer, and white bordering the black mask broader and becoming yellow on sides of neck; wing 2.40–2.50, tail 2.40–2.55, exposed culmen .46, tarsus .82–.90. *Hab.* Eastern and southern Mexico (Xalapa, etc.).

G. melanops Baird. **Xalapa Yellow-throat.**[1]

e^2. Tarsus .90, or more; exposed culmen .48, or more; adult male with black mask bordered posteriorly with bright primrose-yellow.

Adult male: Otherwise similar in color to *G. melanops*, but still richer olive-green above and more intense yellow beneath. *Adult female:* Above rich olive-green, slightly tinged with reddish brown on crown; beneath rich gamboge-yellow (somewhat tinged with saffron anteriorly), the belly more whitish and flanks inclining to grayish brown; length (skins) about 5.50–6.00, wing 2.30–2.55 (2.43), tail 2.40–2.75 (2.59), exposed culmen .48–.51 (.49), tarsus .90–.95 (.91). *Hab.* Southern portion of Lower California.

682. **G. beldingi** Ridgw. **Belding's Yellow-throat.**

d^2. Exposed culmen .60, or more; bill stout, compressed, with the culmen decidedly curved.

e^1. Black mask of adult males bordered behind by light ash-gray (sometimes tinged with yellowish from eye downwards); upper parts dull olive-green; lower parts rather light gamboge-yellow, sometimes inclining to buffy whitish on anal region and flanks. *Adult females* with forehead dull brownish or grayish like crown, and posterior lower parts (except under tail-coverts) dull whitish.

f^1. Bill more slender and tarsus longer. *Adult male* with hinder border to black mask light ash throughout, the occiput darker ashy; wing 2.30–2.50 (2.41), tail 2.30–2.50 (2.41), exposed culmen .60–.65 (.62), tarsus .90–.92 (.90). *Hab.* Island of New Providence, Bahamas.

G. rostrata Bryant. **Nassau Yellow-throat.**[2]

Wing 1.95–2.35 (2.15), tail 1.85–2.35 (2.07), exposed culmen .38–.50 (.42), tarsus .73–.80 (.78). These measurements show that, while there is a very great amount of individual variation, the average is intermediate between that of the extreme eastern and western series, respectively.

[1] *Geothlypis melanops* Baird, Review, i. April, 1865, 222.

[2] *Geothlypis rostrata* Bryant, Proc. Bost. Soc. N. H. xi. 1867, 67.

f^2. Bill stouter and tarsus shorter. *Adult male* with hinder border to black mask usually more or less tinged with pale yellow laterally, and occiput dull olive-green like back; wing 2.30–2.55 (2.42), tail 2.25–2.55 (2.42), exposed culmen .60–.63 (.62), tarsus .81–.85 (.84). *Hab.* Island of Abaco, Bahamas.

G. tanneri Ridgw. **Abaco Yellow-throat.**[1]

e^2. Black mask of adult male bordered behind by yellow (much as in *G. beldingi*); upper parts very vivid olive-green; lower parts very rich gamboge-yellow, including anal region and flanks, the latter, however, tinged with olive-green. *Adult female* with forehead and superciliary region olive-yellowish, or yellowish olive-green, and lower parts wholly bright yellow. Wing 2.40–2.60 (2.47), tail 2.45, exposed culmen .61–.62, tarsus .81–.88 (.85). *Hab.* Eleuthera Island, Bahamas. **G. coryi** Ridgw. **Cory's Yellow-throat.**[2]

c^2. Bill extremely slender and acute; black mask of adult male extending over crown, and without any lighter posterior border; legs and feet dark brown or blackish.

Adult male: Above deep olive, or olive-brown, with whole top and sides of head, including malar region, black; lower parts oil-yellow or saffron, inclining to gamboge on throat, and much tinged with brown on sides and flanks. *Immature male* (or *adult male in winter?*) similar, but with top of head dull olive, the lores, ear-coverts, and malar region dull black. *Adult female:* Similar to male, but without any black on head. Length (skin) about 4.80–5.00, wing 2.25–2.35, tail 2.20–2.25, tarsus .80–.85. *Hab.* Southeastern Mexico (Orizaba, etc.).

G. speciosa Scl. **Orizaba Yellow-throat.**[3]

a^2. Bill very stout, decidedly deeper than broad, its greatest depth much more than half its length from nostril, the culmen strongly curved. (Subgenus *Chamæthlypis* Ridgw.[4])

Adult males plain olive-green above, becoming gray on top of head (sometimes on nape also); lores (sometimes also space surrounding eye) black; lower parts gamboge-yellow, sometimes becoming buffy whitish on lower belly and flanks. *Adult females* similar to males, but lacking gray and black of head, and yellow of lower parts paler.

b^1. Eyelids white.

c^1. Bill smaller; belly and anal region buffy whitish, the sides and flanks pale grayish buff; *adult male* with top of head bluish gray; wing 2.10–2.25, tail 2.40–2.50 (feathers much worn at tips), exposed culmen .40, depth of bill at base .15–.18, tarsus .85. *Hab.* Western Mexico (Mazatlan, etc.).

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[1] *Geothlypis tanneri* Ridgw., Auk, iii. July, 1886, 335.

[2] *Geothlypis coryi* Ridgw., Auk, iii. July, 1886, 334.

[3] *Geothlypis speciosa* Scl., P. Z. S. 1853, 447.

[4] New subgenus. Type, *Geothlypis poliocephala* Baird.

(85.) **G. poliocephala** Baird. **Mazatlan Yellow-throat.**[1]

c^2. Bill larger and stouter; belly and anal region yellow, the sides and flanks light olive-grayish; *adult male* with top of head dull brownish gray; wing 2.25–2.35, tail 2.50 (or more, the feathers in both specimens being very much worn at tips), exposed culmen .45–.48, depth of bill at base .20–.22, tarsus .88. *Hab.* Eastern Mexico (Mirador, etc.) and Yucatan (Merida).

G. palpebralis Ridgw. **Mirador Yellow-throat.**[2]

b^2. Eyelids entirely black in adult male (brownish or olive in female and young).

Otherwise like *G. palpebralis*, but gray of head much deeper and purer, and extending over nape, and black of head more extensive (crossing anterior portion of forehead and entirely surrounding eye); bill rather less stout; wing 2.30–2.35, tail 2.50–2.60 (or more, the feathers being much worn at ends), exposed culmen .45–.47, depth of bill at base .20, tarsus .90–.92. *Hab.* Guatemala and British Honduras to Costa Rica.

G. caninucha Ridgw. **Gray-naped Yellow-throat.**[3]

Genus ICTERIA Vieillot. (Page 482, pl. CXV., fig. 6.)

Species.

Common Characters.—*Adult males:* Above plain olive-green or olive-grayish; throat, chest, and breast rich gamboge-yellow; belly, anal region, and under tail-coverts white; eyelids, supraloral streak, and malar stripe white; lores deep black. *Adult female:* Similar to the male, but colors duller, with black and white markings less strongly contrasted. *Young:* Above plain dull olive or olive-grayish, the head with the white and black or dusky markings of the adult but indistinctly indicated; malar region, chin, throat, chest, and breast grayish white (more tinged with grayish on chest), the yellow soon appearing in patches. *Nest* in briery thickets, composed exteriorly of dry leaves, thin strips of grape-vine bark, coarse grasses, etc., lined with finer grasses. *Eggs* 3–5, pure white, or pinkish white, spotted, speckled, or sprinkled with reddish brown, or rich madder-brown, and lilac-gray.

a^1. Above olive-green; white malar stripe shorter; wings and tail shorter; length

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[1] *Geothlypis poliocephala* Baird, Review, i. April, 1865, 225.

[2] New species. Type, No. 44743, U. S. Nat. Mus., ♂ ad., Mirador, Mexico, Aug. 24; C. Sartorius. (= *G. poliocephala* Sharpe, Cat. B. Brit. Mus. x., pl. ix., fig. 3.)

[3] *Geothlypis poliocephala*, var. *caninucha* Ridgw. in Hist. N. Am. B. i. 1874, 296. *Geothlypis caninucha* Salv. & Godm., Biol. Centr.-Am., Aves, i. 1881, 153, pl. ix., fig. 2.

Note.—It may be explained that these three nearly-related species (or possibly subspecies, since intermediate specimens *may* hereafter be found) are diagnosed above entirely from specimens in summer plumage, thus showing that Mr. Sharpe's suggestion (page 359, vol. x., Cat. B. Brit. Mus.) that they may represent seasonal differences of plumage fails of verification.

6.75–7.50, wing (male) 2.90–3.20 (3.03), tail 2.90–3.35 (3.08). *Eggs* .89 × .67. *Hab.* Eastern United States, north to Ontario and southern New England, west to edge of Great Plains; south, in winter, through eastern Mexico to Guatemala (Costa Rica?)...... 683. **I. virens** (Linn.). **Yellow-breasted Chat.**

*a*². Above olive-gray (sometimes nearly pure gray); white malar stripe longer; wings and tail longer; length 7.00–8.00, wing (male) 3.05–3.35 (3.13), tail 3.30–3.60 (3.43). *Eggs* .89 × .69. *Hab.* Western United States, east to Great Plains, south into Mexico.

683*a*. **I. virens longicauda** (Lawr.). **Long-tailed Chat.**

Genus SYLVANIA Nuttall. (Page 483, pl. CXVII., fig. 8.)

Species.

*a*¹. Wing with two whitish bands.

Adult male: Above olive-green, the wing with two dull white bands, the outer tail-feathers with a white spot near end of inner web; a narrow white orbital ring; lower parts pale yellow, fading into white posteriorly; length 5.00. *Hab.* Kentucky. (One of the so-called "lost species" of Audubon.)

—. **S. microcephala** Ridgw. **Small-headed Warbler.**[1]

*a*². Wing without any markings.

*b*¹. Upper parts olive-green.

*c*¹. Inner webs of outer tail-feathers with white patches.

Adult male: Forehead and ear-coverts gamboge-yellow; rest of head and neck, including chest, uniform deep black; rest of lower parts pure gamboge-yellow. *Adult female:* Similar to male, but with black of head usually much less distinct, sometimes wholly absent, that of upper portions being replaced by olive-green, that of throat, etc., by gamboge-yellow. *Young in first autumn:* Similar to adult female, without black on head. Length 5.00–5.70, wing 2.50–2.75, tail 2.20–2.40. *Nest* in low bushes in undergrowth of high, damp woods. *Eggs* 3–4, .70 × .53, white, or buffy white, speckled or spotted round larger end with reddish brown and lilac-gray, usually mixed with a few black specks or pen-lines. *Hab.* Eastern United States, north to southern parts of Michigan, New York, and New England, west to edge of Great Plains; south, in winter, to Cuba, Jamaica, and through eastern Mexico and Central America to Panama............ 684. **S. mitrata** (Gmel.). **Hooded Warbler.**

*c*². Inner webs of tail-feathers without any white. (*Adult males* plain olive-green above, the crown glossy blue-black; lower parts, and sides of head, gamboge-yellow. *Adult females* similar to adult male, but black crown-patch usually less distinct, often merely indicated, and sometimes entirely wanting, the whole top of the head being uniform olive-green. *Young in first autumn* similar to adult females, without black on crown.)

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[1] For references, see p. 357, A. O. U. Check List.

*d*¹. Duller colored, with shorter wing and tail, and broader as well as darker-colored bill; length 4.25–5.10, wing (male) 2.15–2.35 (2.20), tail 2.05–2.25 (2.11). *Nest* embedded in ground, in swampy woods, somewhat like that of *Helmitherus vermivorus* or *Mniotilta varia*. *Eggs* 4–5, .60 × .48, white or creamy white, speckled with reddish brown and pale lavender or lilac-gray. *Hab.* Eastern and northern North America, west to and including Rocky Mountains, and to coast of Bering's Sea; breeding from northern border of United States (and higher Rocky Mountains?) northward; in winter, south through eastern Mexico and Central America to Panama.

685. **S. pusilla** (Wils.). **Wilson's Warbler.**

*d*². Brighter colored (the back bright yellowish olive-green, lower parts rich gamboge-yellow, the forehead, in adult males, often tinged with orange), with longer wing and tail, and narrower as well as paler-colored bill; length 4.25–5.10, wing (male) 2.15–2.30 (2.21), tail 2.00–2.20 (2.10). *Eggs* .61 × .47. *Hab.* Western North America (chiefly along or near Pacific coast, north to Kadiak, Alaska); south, in winter, through western Mexico to Costa Rica.

685*a*. **S. pusilla pileolata** (Pall.). **Pileolated Warbler.**

*b*². Upper parts plumbeous-gray (tinged with olive in young and autumnal specimens).

Adult male: Forehead spotted with black; a yellow supraloral bar and an orbital ring of the same color; lores black; lower parts yellow, fading into white on under tail-coverts, the chest crossed by a series of black spots. *Adult female:* Similar to male, but without black spots on forehead, and those across chest much less distinct, and often olive-grayish or dusky instead of black; yellow orbital ring and streak above lores less distinct. *Young in fall:* Similar to the duller-colored adult females. Length 5.00–5.75, wing 2.50–2.65, tail 2.20–2.40. *Nest* in clumps of weeds or tussocks of grass in swampy woods. *Eggs* 3–5, .68 × .51, colored like those of *S. mitrata*. *Hab.* Eastern North America, north to Newfoundland, southern Labrador, and Lake Winnipeg; south, in winter, through eastern Mexico and Central America to Ecuador.

686. **S. canadensis** (Linn.). **Canadian Warbler.**

GENUS **SETOPHAGA** SWAINSON. (Page 483, pl. CVIII., figs. 1, 2.)

Species.

COMMON CHARACTERS.—*Adult males* (sometimes females also) with plumage mainly red and black, or red and plumbeous.

*a*¹. Belly white; basal portion of secondaries and quills and basal half (or more) of tail-feathers (except middle), light salmon-red or orange-red in adult male, yellow in female and young male; sexes very unlike in coloration.

Adult male: Uniform glossy black, relieved by light red basal portion of secondaries, quills, and tail-feathers, and sides of breast with a patch of the same (varying from rich orange-red to salmon-pink and orange-yellow); belly and lower tail-coverts white, the latter usually with blackish central spots. *Adult female:* Pattern of coloration as in male, but black replaced above by grayish olive, and on throat, etc., by grayish white; wing- and tail-markings and patches on sides of breast yellow. *Young male:* Similar to adult female, but browner above, the colored areas usually inclining more to orange or salmon-color; after first winter, the plumage interspersed with glossy black feathers. Length 4.75–5.75, wing 2.40–2.55, tail 2.30–2.45. *Nest* cup-shaped, compact, of plant-fibres, spiders' webs, etc., usually saddled upon horizontal branch or in fork, 7–30 feet from ground. *Eggs* 3–5, .63 × .48, white, greenish white, or grayish white, speckled or spotted, chiefly round larger end, with brown and lilac. *Hab.* Eastern North America, west to, and including, Rocky Mountains, north to British Columbia and Fort Simpson; in winter, West Indies, eastern Mexico, Central America, and south to Ecuador; accidental in California... 687. **S. ruticilla** (LINN.). **American Redstart.**

*a*². Belly red (in both sexes); wings and tail without red or yellow markings, but outer feathers of latter white; sexes alike in coloration.

*b*¹. *Adult:* Head, neck, chest, sides, and upper parts glossy blue-black, the wing with a large white patch, covering greater and middle coverts and edges of tertials; no chestnut or rufous on top of head; breast and belly rich carmine-red; lower eyelid and under tail-coverts pure white. *Young:* Above dull black, with white markings as in adult; beneath dull grayish dusky, sometimes of a more sooty cast, the breast and belly without any red. Length about 5.00–5.50, wing 2.70–2.82, tail 2.35–2.78.

*c*¹. Third tail-feather with greater part of its outer web and a large portion of inner web (at end) white. *Nest* placed within cavities in banks, among rocks, etc. *Eggs* 3–4, .65 × .48, white, finely speckled with reddish brown and lilac. *Hab.* Highlands of Mexico, north to southern Arizona and New Mexico (and Texas?).

688. **S. picta** SWAINS. **Painted Redstart.**

*c*². Third tail-feather with outer web entirely black, and inner web with very little white at tip (sometimes with none at all); white edgings to secondaries much narrower. *Hab.* Highlands of Guatemala and extreme southern portion of Mexico (Chiapas).

S. picta guatemalæ SHARPE. **Sharpe's Redstart.**[1]

b^2. *Adult:* Above dark plumbeous, or slate-gray, the forehead, sides of crown, lores, chin, and throat black; crown with a patch of chestnut; sides and flanks slate-gray; under tail-coverts dark slate-color, broadly tipped with white; breast and belly vermilion-red, varying to orange-red. *Young:* "General color above sooty black, the wing-coverts like the back, edged with rusty brown at the tips . . . head a little more dusky than the back; sides of face and throat dull ashy, washed with brown on the chin; lower throat and sides of body dark chocolate-brown, the abdominal feathers paler and more chestnut and with whitish bases; under tail-coverts pale fulvous." (SHARPE.) Length about 5.00–5.50, wing 2.30–2.70, tail 2.50–3.00.

c^1. White of tail more extended, always present on third feather as a broad terminal spot, and often present on tip of fourth; breast and belly always (?) pure vermilion or scarlet. *Hab.* Highlands of Mexico, north to southern Texas?

689. **S. miniata** SWAINS. **Red-bellied Redstart.**

c^2. White of tail more restricted, reduced to a narrow terminal spot (sometimes wanting altogether) on third feather and never found on fourth; breast and belly usually more orange-red, sometimes of a decided orange tint. *Hab.* Highlands of Guatemala.

S. miniata flammea KAUP. **Kaup's Redstart.**[2]

GENUS **CARDELLINA** DU BUS. (Page 483, pl. CXVIII., fig. 3.)

Species.

Adult (sexes alike): Forehead, lores, cheeks, chin, throat, and sides of neck rich vermilion-red, sometimes inclining to carmine; crown and ear-coverts deep black; occiput whitish; upper parts uniform ash-gray, the rump white, and middle wing-coverts indistinctly tipped with same; lower parts (except throat) whitish. *Young:* Whole top and sides of head dull umber-brown; chin, throat, chest, breast, and sides of neck paler and more tinged with grayish; posterior lower parts dull white; back and scapulars grayish brown; rump dull white; middle and greater wing-coverts conspicuously tipped with buffy. *Young in first autumn:* Black of crown and ear-coverts obsolete or very indistinct, and red parts merely indicated by a slight tingeing of red on a smoky grayish ground; upper parts washed with brown; otherwise much like adult. Length about 5.00–5.50, wing 2.53–2.80, tail 2.32–2.60.

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[1] *Setophaga picta*, Sw., *a. guatemalæ* Sharpe, p. xii.; [*Setophaga picta*] Subsp. *a. Setophaga guatemalæ*, and *Setophaga guatemalæ*, p. 417 (sub. fig.), SHARPE, Cat. B. Brit. Mus. x. 1885.

[2] *Setophaga flammea* KAUP, P. Z. S. 1851, 50; [*Setophaga miniata*] Subsp. *a. Setophaga flammea* SHARPE, Cat. B. Brit. Mus. x. 1885, 419.

Hab. Highlands of Guatemala and Mexico, north to southern border of United States (southern Texas? to southern Arizona).

690. **C. rubrifrons** (GIRAUD). **Red-faced Warbler.**

GENUS **ERGATICUS** BAIRD. (Page 483, pl. CXVIII., fig. 4.)

Species.

COMMON CHARACTERS.—*Adults* (*sexes alike*): Prevailing color red, the wings and tail dusky brownish.

*a*¹. *Adult:* Above plain dusky red, brighter on rump and upper tail-coverts; lower parts, including sides of neck and head (except ear-coverts), brighter red, inclining to vermilion; ear-coverts silvery white, in conspicuous contrast; wings and tail brownish dusky, the lesser and greater wing-coverts broadly edged with brownish red, and middle coverts broadly tipped with pinkish red; remiges and rectrices edged with dull light brownish red. *Young:* Above dull rusty brown; beneath similar but paler, inclining to cinnamon; ear-coverts silvery white, as in adult. Length about 4.50–5.00, wing 2.30–2.50, tail 2.40–2.55. *Hab.* Highlands of eastern Mexico (north to southern Texas?).......... 691. **E. ruber** (SWAINS.). **Red Warbler.**

*a*². *Adult:* Head, neck, and chest light silvery pink, the feathers dusky at base (dark red on chest, where the underlying color is more exposed); rest of lower parts plain dull vermilion-red; back and scapulars dark claret-red; rump light pinkish red; about the size of *E. ruber.* *Hab.* Highlands of Guatemala.

E. versicolor (SALV.). **Pink-headed Warbler.**[1]

GENUS **BASILEUTERUS** CABANIS. (Page 483, pl. CXVIII., figs. 5, 6.)

Species.

COMMON CHARACTERS.—Above plain olive-green, with top and sides of head chestnut; or olive-gray, the top of head with two black (lateral) and one (median) yellow or orange-rufous stripes; beneath yellow, or with posterior half (or more) whitish.

*a*¹. Top of head with two black lateral stripes, enclosing a median stripe of yellow (varying to orange-rufous); rest of upper parts plain olive-gray (sometimes tinged with olive-green); lower parts yellow, tinged with olive laterally; length about 4.50–5.00, wing 2.10–2.30, tail 2.00–2.10. *Hab.* Middle America, south to Veragua, north to eastern Mexico; southern Texas?

692. **B. culicivorus** (LICHT.). **Brasher's Warbler.**

*a*². Top of head chestnut or rufous, with or without black lateral and frontal border; rest of upper parts plain olive-green.

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[1] *Cardellina versicolor* SALV., P. Z. S. 1863, 188, pl. 24, fig. 4. *Ergaticus versicolor* SCL. & SALV., Nom. Neotr. 1873, 11.

*b*¹. Superciliary stripe bright yellow; top of head with a black stripe on each side, and forehead black medially.

Side of head rich chestnut, becoming blackish on lores; lower parts yellow, changing to olive-green laterally; length about 5.00, wing 2.30–2.60, tail 2.40–2.60. *Hab.* Guatemala and eastern Mexico; southern Texas? .... 693. **B. belli** (GIRAUD). **Bell's Warbler.**

*b*². Superciliary stripe white; top of head without any black.

*c*¹. Lower parts entirely yellow.

Ear-coverts rufous, like top of head; length about 4.50–5.00, wing 2.10–2.20, tail 2.25–2.60. *Hab.* Central America, from Panama to Guatemala. **B. delattrii** BONAP. **Delattre's Warbler.**[1]

*c*². Lower parts yellow only as far back as breast, the belly white and flanks and under tail-coverts pale brownish buff.

Otherwise like *B. delatrii*, but cheeks more extensively white; length about 4.50–4.75, wing 2.00–2.10, tail 2.20–2.35. *Hab.* Southern Mexico, north to Mirador, Orizaba, and Mazatlan. **B. rufifrons** (SWAINS.). **Rufous-crowned Warbler.**[2]

FAMILY MOTACILLIDÆ.—THE WAGTAILS AND PIPITS. (Page 322.)

Genera.

*a*¹. Tail equal to or longer than wing; plumage plain, both above and below.

*b*¹. Tail longer than wing, double-rounded or emarginate; hind claw shorter than the toe, strongly curved; back ash-gray or black. **Motacilla.** (Page 532.)

*b*². Tail not longer than wing, rounded; hind claw longer than the toe, slightly curved; back olive, olive-green, or brownish.... **Budytes.** (Page 534.)

*a*². Tail decidedly shorter than wing; plumage usually much streaked below (sometimes above also).. **Anthus.** (Page 535.)

GENUS MOTACILLA LINNÆUS. (Page 532, pl. CXIX., fig. 1.)

Species.

*a*¹. Lower parts pure white; adults with black on chest (throat also, in summer); upper tail-coverts blackish or dark grayish; third tail-feather black. *Nest* on ground, usually near water, composed of dried grasses, etc., lined with softer materials. *Eggs* 3–5, whitish, thickly speckled with brown. (*Adults in summer—sexes essentially alike*[3]*:* Entire throat and chest uniform deep black, with a strongly convex posterior outline; forehead, superciliary region, and sides of head pure white, some species having a black streak through eye; crown and occiput, sometimes hind-neck also, and in one species the entire back, deep black; bill entirely deep black. *Adults in winter:* Differing from summer plumage in having at least the upper portion, sometimes all, of throat white; in gray-backed species the gray somewhat tinged with brownish, in black-backed species the black of back replaced by ash-gray. *Young in first winter:* Much duller in color than adults, with gray of a browner tint, black on top of head wanting or merely indicated, black below confined to a narrow crescent on chest, with sometimes a cluster or series of black spots extending upward from each extremity of the crescent along sides of lower throat; white of head more or less tinged with yellow. *Young:* Above dull brownish gray, including whole top of head, the latter usually with a blackish or dusky suffusion along each side of crown; white of wings much reduced in extent, much less pure, or sometimes even replaced by light brownish gray; chin and throat dull grayish white bordered posteriorly by a rather poorly defined dusky crescent across chest; sides of breast dull brownish gray; remaining lower parts dull white, purer posteriorly.)

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[1] *Basileuterus delatrii* BONAP., Comp. Rend. xxxviii. 1854, 383.

[2] *Setophaga rufifrons* SWAINS., An. in Menag. 1837, 294. *Basileuterus rufifrons* BONAP., Consp. i. 1850, 314.

[3] Except in *M. lugens*, in which the female has the back gray or much mixed with gray, instead of uniform black.

b^1. Without a black or dusky streak through eye; adults with wing-coverts tipped with grayish white, forming two bands across wing.

Back, scapulars, and rump always gray; length about 6.50–7.30, wing 3.25–3.55, tail 3.50–3.80; bill very slender. *Eggs* .78 × .60, white or grayish white, thickly speckled with grayish brown or dark brown. *Hab.* Europe and northern Asia, wintering in northeastern Africa and southern Asia; accidental in Greenland.

694. **M. alba** (Linn.). **White Wagtail.**

b^2. With a distinct black or dusky streak through eye (except in first plumage); adults with exposed surface of middle and greater wing-coverts entirely white, forming a large patch on wing.

c^1. Hind-neck, back, scapulars, and rump always gray; adult with inner webs of quills chiefly dusky gray; length about 6.75–7.50, wing 3.50–3.60, tail 3.50–4.00, exposed culmen .45–.50. *Hab.* Northeastern Siberia in summer; south, in winter, through Transbaikal and China to Burmah; occasional in Kamtschatka; accidental in Lower California (and Aleutian Islands ?).

695. **M. ocularis** Swinh. **Swinhoe's Wagtail.**

c^2. Hind-neck always black in adults, the entire back, scapulars, lesser wing-coverts, and rump deep black in fully adult male; *adult female* and *winter male* with back ash-gray (more bluish than in *M. ocularis*), or gray clouded with black; adults with inner webs of quills pure white except at tips, and white on outer surface of wings much more extensive and continuous than in *M. ocularis;* larger than *M. ocularis;* length about 7.00–7.75, wing 3.50–3.95, tail 3.70–4.20, exposed culmen .50–.55. *Hab.* Kamtschatka, Amurland, Kurils, and

Yezo in summer; southern Japan, Formosa, and eastern China in winter; accidental in Aleutian Islands (Attu; TURNER)?

M. lugens (KITTL.). Kamtschatka Wagtail.[1]

a^1. Lower parts yellow (dull yellowish white in young, but lower tail-coverts always yellow), without black on breast; upper tail-coverts olive-yellow or yellowish olive-green; third tail-feather chiefly white. (Subgenus *Calobates* KAUP.[2])

Adult male in summer: Above ash-gray, including top and sides of head; lower rump and upper tail-coverts bright yellowish olive-green, or olive-yellow; wings blackish, the tertials broadly edged with whitish; a white superciliary stripe, and a malar stripe of same; chin and throat black; rest of lower parts primrose-yellow, deepening into gamboge on under tail-coverts. *Adult female in summer:* Similar to the male, but chin and throat white or pale yellow bordered laterally and posteriorly by blackish or dusky spotting (sometimes with throat more extensively black). *Adults in winter* same as in summer, but throat white. *Young in first winter:* Brownish gray above; superciliary stripe and chest strongly tinged with buff; otherwise like adults. *Young:* Above brownish gray; middle and greater wing-coverts tipped with pale fulvous, buffy, or whitish, producing two bands on wing; lower parts dull white, faintly shaded with ashy on breast, the lower tail-coverts pale yellow. (In younger individuals the superciliary stripe and throat buffy.) Length about 7.00, wing 3.20–3.30, tail 3.50–3.80. *Hab.* Eastern Asia, breeding from China and Japan northward.

M. melanope PALL. Gray Wagtail.[3]

GENUS BUDYTES CUVIER. (Page 532, pl. CXIX., fig. 2.)

Species.

COMMON CHARACTERS.—*Adult males in summer:* Top of head and hind-neck bluish gray or plumbeous; sides of head similar, but darker, separated from the lighter color above by a distinct white superciliary stripe; back, scapulars, rump, and upper tail-coverts plain olive-green; wings brownish dusky, the coverts tipped with brownish white or pale brown, and tertials edged with same; tail blackish, the two outer pairs of feathers partly white; chin white; rest of lower parts yellow, the chest usually more or less clouded with dusky. *Adult female:* Similar to male, but usually rather duller, the head more brownish gray, the yellow of under parts paler, etc. *Adult (?) in winter:* Above dull olive-brown, including head; beneath yellowish buff, the chin white, and chest clouded with dusky, as in summer. *Young in first winter:* Above dull olive-brown, including head; superciliary stripe pale buff; lower parts chiefly white, the chest, breast, sides, and flanks dull light buff, the first clouded with grayish brown; wing-coverts tipped, and tertials edged, with dull sulphur-yellow. *Young:* Above dull olive-brown, the top of head suffused with blackish laterally; light wing-markings dull buff-yellow; superciliary stripe, broad malar stripe (widening on side of neck), and lower parts generally, dull light buff-yellow; chin and throat dull white, bordered along each side by a broad streak of dull blackish, this confluent with a broken crescentic patch of same on chest. Length 5.50–6.80, wing 2.95–3.30, tail 2.65–3.10. *Nest* on ground, concealed by projecting tussock or overhanging bank, composed of dry grass, etc., often lined with soft feathers. *Eggs* 3–7, dull white, brownish white, or pale isabella-color, densely speckled with different shades of light brown.

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[1] *Motacilla lugens* KITTL., Kupf. Vög. 1832, 16, pl. 21, fig. 1.

[2] *Calobates* KAUP., Natürl. Syst. 1829, 33. Type, *Motacilla melanope* PALL.

[3] *Motacilla melanope* PALL., Reis. Russ. Reichs, iii. 1776, App. p. 696.

*a*¹. Top of head and hind-neck lighter, more ashy, gray, the lores and ear-coverts not conspicuously darker; lower parts purer yellow (often rich gamboge). *Hab.* Europe, etc.

B. flavus (Linn.). **Yellow Wagtail.**[1]

*a*². Top of head and hind-neck darker, more plumbeous, gray, the lores and ear-coverts usually conspicuously darker; lower parts lighter, less pure yellow (varying from citron- to sulphur-yellow), the chest more distinctly blotched with dusky. *Eggs* .76 × .55. *Hab.* Alaska (north of the peninsula), eastern Siberia, and Kamtschatka, wintering in eastern China and the Moluccas.

696. **B. flavus leucostriatus** (Hom.). **Siberian Yellow Wagtail.**

Genus **ANTHUS** Bechstein. (Page 532, pl. CXIX., figs. 3, 4.)

Species.

Common Characters.—Above brownish, more or less distinctly streaked with darker (nearly uniform grayish in summer plumage of *A. pensilvanicus*), the wings with lighter edgings, and two more or less distinct light bands across tips of coverts; beneath paler (usually dull buffy—rarely whitish), the chest, and sometimes sides also, usually more or less distinctly streaked with darker; outer tail-feathers with more or less of white. *Nest* on ground, bulky and rather compact, composed of dried mosses, grasses, etc., lined with hair, feathers, etc. *Eggs* with a pale ground-color, but this usually overlaid by so dense a speckling or mottling of brown as to give a nearly uniform brown surface.

*a*¹. Tarsus longer than hind-toe, with claw; inner web of outer tail-feather chiefly dusky. *Eggs* pale olive, olive-whitish, or pale chocolate-brown, thickly freckled with brown (sometimes nearly uniform chocolate-brown). (Subgenus *Anthus.*)

*b*¹. Back, scapulars, and top of head plain brownish gray or brownish, or with very indistinct darker streaks.

Adult in summer: Above brownish gray or grayish brown, the feathers of top of head and back showing more or less distinct darker centres, most obvious on back; wings and tail dusky, with light brownish gray edgings, the middle and greater coverts tipped with same; superciliary stripe and lower parts light cinnamon-buff, paler on chin and upper throat, the chest (sometimes sides also) more or less streaked with dusky. *Winter plumage:* Above decidedly more brown than in summer; beneath much duller buffy (without any cinnamon tint), the streaks on breast usually broader. *Young:* Above dull brownish gray; beneath dull brownish white, the chest spotted or broadly streaked with blackish. Length 6.00–7.00, wing 3.20–3.50, tail 2.65–2.85, tarsus .85–.90. *Eggs* .78 × .57. *Hab.* Whole of North America, breeding from Labrador and high mountains of Colorado (above timber-line), etc., to Arctic coast.

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[1] *Motacilla flava* Linn., S. N. ed. 10, i. 1758, 185. *Budytes flava* Cuv., Règ. An. 1817, 371.

697. **A. pensilvanicus** (LATH.). **American Pipit.**

*b*². Back, scapulars, and top of head umber-brown or tawny olive, conspicuously streaked with black.

*c*¹. Back and scapulars without distinct whitish streaks.

*d*¹. Rump and upper tail-coverts nearly plain brown or olive superficially, the darker streaks almost wholly concealed; chin, throat, etc., never fawn-color. *Summer adult:* Above rather light umber- or olive-brown, the top of head narrowly and back broadly streaked with black; wings and tail dusky, the middle wing-coverts broadly margined terminally with dull buffy whitish, the greater coverts more narrowly margined with same; beneath dull buffy whitish (the throat and breast sometimes deep buffy), the chest and sides (including sides of throat) sharply streaked with brownish black. *Winter plumage:* Above brighter, more olive, brown, beneath decided buff, the markings as in summer. *Young:* Above light grayish brown, more broadly, but less sharply, streaked than in adult; beneath light buffy, tinged with olive, streaked much as in adult. Length about 5.50–6.25, wing 3.00–3.20, tail 2.40–2.50, tarsus .85. *Eggs* .78 × .59. *Hab.* Europe; northern Africa in winter; occasional in southern Greenland.

698. **A. pratensis** (LINN.). **Meadow Pipit.**

*d*². Rump and upper tail-coverts conspicuously streaked with blackish; chin, throat, etc., deep cinnamon buff or fawn-color in full adult plumage. *Adult* (*full plumage*[1]): Superciliary stripe, malar region, chin, and throat (sometimes chest also) uniform fawn-color or cinnamon-buff; otherwise as in *A. pratensis,* except that the rump and upper tail-coverts are distinctly streaked or striped with blackish. (Other plumages resembling corresponding stages of *A. pratensis,* but always distinctly streaked or striped with blackish on rump and upper tail-coverts, and color of upper parts less olivaceous—more brown in immature winter dress.) Length about 5.00–6.00, wing 3.15–3.50, tail 2.35–2.55, tarsus .85–.90. *Hab.* Northern Europe and Asia in summer; in winter, northeastern Africa and greater part of southern Asia; occasional in Alaska, and accidental in Lower California.

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[1] This is usually described as the summer plumage; but of the five specimens in this plumage which are at this moment before me, two were shot in December and one in September, the latter being in fresh fall plumage; the date of one specimen is not recorded.

699. **A. cervinus** (PALL.). **Red-throated Pipit.**

*c*². Back and scapulars streaked with whitish (forming two or more nearly parallel stripes when feathers are properly arranged).

Summer adult: Above light brown, everywhere streaked with black, the back with several longitudinal series of whitish streaks; middle wing-coverts blackish, abruptly tipped or bordered terminally with whitish; greater coverts more narrowly tipped with more brownish white, and edged with light brown; beneath whitish, more or less strongly tinged with buff on lower throat and chest, the latter, with sides and flanks, streaked with black; sides of throat usually without black streaks. *Winter plumage* similar, but browner above and more decidedly buffy beneath. Length (skins) about 5.50–6.00, wing 3.20–3.50, tail 2.25–2.40, tarsus .95–1.00. *Hab.* Kamtschatka (including Commander Islands) and whole of Siberia in summer; in winter, south to Philippines, Borneo, etc.

A. gustavi SWINH. **Petchora Pipit.**[1]

*a*². Tarsus shorter than hind toe, with claw; inner web of outer tail-feather chiefly (sometimes entirely) white. *Eggs* .87 × .62, dull pale purplish buffy or dull buffy whitish, thickly speckled with dull purplish brown. (Subgenus *Neocorys* SCLATER.)

Adult in summer: Above broadly streaked with pale grayish buff and dusky; wings dusky, with pale grayish buffy edgings; two outer tail-feathers chiefly white (the outermost sometimes entirely white); beneath dull buffy white, more buffy across chest, where narrowly streaked with dusky; legs and feet very light-colored. *Winter plumage* much more decidedly buffy, both above and below, with dark streaks on chest broader and less sharply defined. *Young:* Above brownish buff, broadly streaked with black, the feathers of back and scapulars narrowly margined terminally with buffy or whitish; chin, throat, and sides of neck whitish, the last, and also lower throat, streaked with dusky; rest of lower parts light buff, growing gradually paler posteriorly, the chest and sides of breast streaked with black. Length 5.75–7.00, wing 3.20–3.40, tail 2.35–2.60, tarsus .90. *Hab.* Interior plains of North America, breeding from central Dakota north to the Saskatchewan; south, in winter, over southern plains to southern Mexico (Puebla).

700. **A. spragueii** (AUD.). **Sprague's Pipit.**

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[1] *Anthus gustavi* SWINH., P. Z. S. 1863, 90.

FAMILY CINCLIDÆ.—THE DIPPERS. (Page 323.)

Genera.

(Characters same as those given for the Family)....... **Cinclus.** (Page 538.)

GENUS CINCLUS BECHSTEIN. (Page 538, pl. CXIX., fig. 5.)

Species.

COMMON CHARACTERS (of North American species).—Color plain grayish, the head sometimes more brownish; young and winter specimens with larger feathers of wings and those of posterior lower parts bordered with whitish, the lower parts decidedly whitish or much suffused with white in young.

a^1. *Adult in summer:* Uniform slate-grayish, the head and neck more brownish (sometimes decidedly brown); bill entirely black. *Winter plumage:* Similar, but tertials, greater wing-coverts, and feathers of lower parts bordered terminally with whitish; lower mandible light-colored on basal portion. *Young:* Similar to winter plumage, but lower parts more or less mixed with white, and tinged posteriorly with rusty. Length 7.00–8.50, wing 3.40–3.81, tail 1.90–2.12, culmen .60–.70, tarsus 1.00–1.20. *Nest* built within a very bulky oven-shaped structure composed of closely compacted green mosses, the entrance on one side, the nest proper embedded in the floor of the "house," and composed of fine rootlets, etc.; the nest built among rocks near running water, often behind a cascade. *Eggs* 3–5, 1.02 × .70, plain pure white. *Hab.* Mountainous districts of western North America, north to Alaska (Yukon Valley, where resident), south to Costa Rica.
701. **C. mexicanus** SWAINS. **American Dipper.**

a^2. *Adult:* Above bluish gray, or plumbeous, slightly darker on head; beneath ash-gray, lighter anteriorly, more plumbeous on sides. *Young:* Chin, throat, and chest white; other lower parts grayish white, tinged with plumbeous laterally; wing-coverts tipped with grayish white, the quills and secondaries bordered terminally with pure white. Wing 3.50–3.65, tail about 2.00, culmen .70–.72, tarsus 1.28–1.30. *Hab.* Mountains of Costa Rica and Veragua.
C. ardesiacus SALV. **Costa Rican Dipper.**[1]

FAMILY TROGLODYTIDÆ.—THE WRENS, THRASHERS, ETC. (Page 322.)

Genera.

a^1. Rictal bristles well developed; inner toe entirely free at base from middle toe; wing 3.50, or more. (Subfamily *Miminæ.*)
  b^1. Tail shorter than wing, nearly even................ **Oroscoptes.** (Page 541.)

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[1] *Cinclus ardesiacus* SALV., Ibis, 1867, 121, pl. 2.

b^2. Tail longer than wing, much rounded.

c^1. Exposed culmen decidedly shorter than middle toe, without claw.

d^1. Plumage varied, the wings and tail distinctly (often conspicuously) marked with white.

Gonys straight, or sometimes even slightly concave; tarsal scutellæ very distinct.................. **Mimus.** (Page 541.)

d^2. Plumage plain, the wings and tail without white markings.

e^1. Larger (wing more than 4.00, tail 5.00, or more); gonys straight; tarsal scutellæ very distinct.

Color plain brown above, dull whitish beneath. **Mimodes.** (Page 542)

e^2. Smaller (wing less than 4.00, tail less than 4.50); gonys appreciably convex; tarsal scutellæ indistinct (sometimes nearly obsolete).

f^1. Exposed culmen shorter than distance between tips of longest and shortest tail-feathers; color slate-gray above, with black cap and tail, ash-gray below, with chestnut under tail-coverts. **Galeoscoptes.** (Page 542.)

f^2. Exposed culmen longer than distance between tips of longest and shortest tail-feathers; color uniform glossy violet-black, the wings and tail more bluish or greenish .... *Melanoptila.*[1]

c^2. Exposed culmen equal to or longer than middle toe, without claw.

d^1. Above plain grayish blue, the lores and ear-coverts deep black; beneath grayish blue or pure white........................ *Melanotis.*[2]

d^2. Above some shade of brownish, grayish, or dusky; beneath, neither grayish blue nor pure white.

e^1. First quill very little, if any, longer than tarsus (sometimes shorter); throat and middle of breast neither red nor rufous.......................... **Harporhynchus.** (Page 543.)

e^2. First quill longer than tarsus and middle toe combined; throat and median lower parts rose-red (in male) or rufous (in female)... *Rhodinocichla.*[3]

a^2. Rictal bristles obsolete, or very indistinct; inner toe united at base to middle toe by at least half the basal phalanx; wing less than 3.50. (Subfamily *Troglodytinæ.*)

b^1. Wing more than 3.00.................................. **Heleodytes.** (Page 547.)

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[1] *Melanoptila* Sclater, P. Z. S. 1857, 275. Type, *M. glabrirostris* Scl. (*Hab.*, coast of Yucatan and Honduras)

[2] *Melanotis* Bonap., Consp. i. 1850, 276. Type, *Orpheus cærulescens* Swains. Two species: (1) *M. cærulescens* (Sw.), of Mexico, which is grayish blue beneath, as well as above, and (2) *M. hypoleucus* Hartl., of Guatemala, which is pure white beneath, except along sides and on under tail-coverts.

[3] *Rhodinocichla* Hartl., Journ. für Orn. 1853, 33. Type, *Furnarius roseus* Less. Two species: (1) *R. rosea* (Less.), from Costa Rica, Colombia, and Venezuela; and (2) *R. schistacea* Ridgw., from western Mexico (Mazatlan, Colima, etc.).

b^2. Wing less than 3.00.

c^1. Outer toe much longer than the inner.

d^1. Exposed culmen shorter than tarsus; posterior lower parts whitish or pale cinnamon .... **Salpinctes.** (Page 547.)

d^2. Exposed culmen longer than tarsus; posterior lower parts deep rusty or brownish, more or less speckled with dusky or whitish, or both.................................... **Catherpes.** (Page 548.)

c^2. Outer toe not distinctly longer than the inner.

d^1. Tail little, if any, shorter than tarsus and middle toe together.

e^1. Nostril opening horizontally along lower edge of nasal fossæ, and overhung by a more or less projecting scale-like membrane.

f^1. Back without streaks; tail graduated for less than one-third its length, the lateral pair of feathers reaching decidedly beyond tips of longest under coverts.

g^1. Bill rather abruptly decurved at tip, stout (or else tail decidedly longer than wing); a conspicuous, sharply defined (usually whitish) superciliary stripe.

h^1. Length of wing exceeding that of tail by less than length of exposed culmen (tail sometimes equal to or even longer than wing).
Thryothorus. (Page 549.)

h^2. Length of wing exceeding that of tail by much more than length of exposed culmen.
Uropsila.[1]

g^2. Bill more slender, more gradually decurved at tip (sometimes nearly straight throughout); superciliary stripe not conspicuous (sometimes nearly obsolete)................ **Troglodytes.** (Page 552.)

f^2. Back streaked with black and white; tail graduated for about one-third its length, the lateral pair of feathers reaching little, if any, beyond tips of longer under coverts......................... **Cistothorus.** (Page 555.)

e^2. Nostril small and nearly circular, opening in the anterior portion of the nasal fossæ, and without overhanging scale or membrane. (Otherwise, very much like *Thryothorus.*)
Thryophilus.[2]

d^2. Tail much shorter than tarsus and middle toe together. (Nostril as in *Thryophilus.*)... *Henicorhina.*[3]

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[1] *Uropsila* SCL. & SALV., Nom. Neotr. 1873, 155. Type, *Troglodytes leucogastra* GOULD. (*Hab.* Southern Mexico.)

[2] *Thryophilus* BAIRD, Review, i. August, 1864, 127. Type, *Thryothorus rufalbus* LAFR. (Six species in Mexico and Guatemala, with others farther southward.)

[3] *Henicorhina* SCL. & SALV., P. Z. S. 1868, 170. Type, *Cyphorhinus leucostictus* CAB. (*Hab.* Southern Mexico to northern South America.)

GENUS **OROSCOPTES** BAIRD. (Page 538, pl. CXX., fig. 1.)

Species.

Adult: Above brownish gray, the wings with two narrow white bands, and the larger wing-feathers edged with pale grayish (whitish in fresh autumn plumage); inner webs of two or three, sometimes four, outer tail-feathers broadly tipped with white; beneath dull white, tinged with buffy on flanks and under tail-coverts, the chest, breast, and sides thickly marked with wedge-shaped longitudinal spots and streaks of dusky. *Young:* Similar to adult, but upper parts indistinctly streaked with darker, and streaks on lower parts less sharply defined. Length 8.00–9.00, wing 3.95–4.19, tail 3.20–3.35, culmen .60–.65, tarsus 1.10–1.15. *Nest* very bulky, composed of sticks, shreds of bark, fine rootlets, etc., placed in bushes (usually of the so-called "sage-bush," *Artemisia tridentata*). *Eggs* 3–5, 1.00 × .71, rich greenish blue, spotted with clove-brown. *Hab.* Artemisia or "sage-brush" plains of western United States, chiefly within the Great Basin, south into Mexico in winter..................... 702. **Oroscoptes montanus** (TOWNS.). **Sage Thrasher.**

GENUS **MIMUS** BOIE. (Page 539, pl. CXX., fig. 4.)

Species.

COMMON CHARACTERS.—Above brownish gray, or ash-gray, with or without darker centres to feathers of back, etc.; tail-feathers (except middle) with white terminal spots or with much white on lateral feathers (these sometimes wholly white); wings usually with more or less conspicuous white edgings or patches; beneath whitish, with or without dusky streaks on flanks. *Young* essentially similar to adult, but breast speckled with dusky. *Nest* very bulky, composed of sticks, and lined with finer materials, placed in thick bushes, thorny trees, hedge-rows, vines, etc. *Eggs* pale bluish or greenish, spotted with reddish brown.

*a*¹. Back plain gray; outer tail-feathers mostly or entirely white; flanks very indistinctly or not at all streaked.

  *b*¹. Primary coverts and basal portion of quills white, forming a large and very conspicuous patch on spread wing. *Adult:* Above plain gray, the wings and tail chiefly blackish; beneath white, tinged on breast with pale grayish (more brownish or buffy in autumn). *Young:* More brownish above, the back indistinctly streaked or spotted with darker; breast distinctly spotted or speckled with dusky. Length 9.00–11.00, wing 4.10–4.90 (4.58), tail 4.50–5.75 (5.04), exposed culmen .63–.75 (.70), tarsus 1.20–1.38 (1.30). *Eggs* .97 × .73, pale greenish blue, varying to pale dull buffy, spotted with reddish brown. *Hab.* United States (rare or local north of 38°), Mexico, Bahamas, and Greater Antilles.
  703. **M. polyglottos** (LINN.). **Mockingbird.**

  *b*². Primary coverts and basal portion of quills entirely dusky.

    *c*¹. Above brownish gray, the wings and tail dusky, with broad edgings of grayish; both rows of wing-coverts tipped with dull white; wing 4.30–4.50 (4.40), tail 4.90–5.20 (5.02), culmen .65–.67 (.66), tarsus 1.20–1.35 (1.27). *Hab.* Southern Mexico (Isthmus of Tehuantepec).

M. lawrencei Ridgw. **Tehuantepec Mockingbird.**[1]

c^3. Above ash-gray, the wings deep black, with pure white edgings; both rows of coverts very sharply tipped with pure white; wing 4.15–4.80 (4.49), tail 5.00–5.80 (5.38), culmen .70–.75 (.72), tarsus 1.20–1.37 (1.31). *Hab.* Atlantic lowlands, from Yucatan (including Cozumel Island) to Honduras.

M. gracilis Cab. **Yucatan Mockingbird.**[2]

a^2. Above grayish brown, the feathers with distinctly darker centres; lateral tail-feathers merely tipped with white (chiefly on inner webs); flanks broadly and conspicuously streaked with dusky.

Adult: Beneath dull white, strongly tinged with brownish gray on breast; a series of dusky streaks along each side of throat; wing 4.70–5.00, tail 5.30–5.70, culmen .82–.95, tarsus 1.45–1.60. *Hab.* Bahamas, Cuba, and Jamaica.

M. gundlachii Cab. **Gundlach's Mockingbird.**[3]

Genus GALEOSCOPTES Cabanis. (Page 539, pl. CXX., fig. 2.)

Species.

Adult: Uniform plumbeous-slate, paler beneath; top of head and tail black; lower tail-coverts chestnut; bill and feet black; iris brown. *Young:* Similar to the adult, but black cap fainter and less sharply defined, lower parts very faintly mottled, transversely, with darker, and lower tail-coverts dull light rusty. Length 8.00–9.35, wing 3.45–3.75, tail 3.70–4.25, culmen .65–.75, tarsus 1.05–1.15; female averaging a little smaller. *Nest* of rootlets, etc., in thickets, orchards, etc. *Eggs* 3–5, .93 × .69, plain deep bluish green. *Hab.* Eastern North America, north to about 54° in the interior; west to and including Rocky Mountains; in winter, southern United States (from about 37°) and south to Cuba and Panama.

704. **G. carolinensis** (Linn.). **Catbird.**

Genus MIMODES Ridgway.[4] (Page 539, pl. CXIX., fig. 6.)

Species.

Adult: Above plain brown, the wings and tail more grayish; greater wing-coverts and secondaries (except toward base) edged with fulvous-brown, the former indistinctly tipped with lighter fulvous; primaries edged with light brownish gray; inner webs of three outer tail-feathers marked at tip with a very indistinct pale brownish gray spot; lores dusky, bordered above by a very indistinct pale brown stripe on each side of forehead; lower parts plain dull brownish white, the flanks indistinctly streaked with dark brownish, and malar region indistinctly barred with same; bill and feet brownish black; length about 9.50–10.00, wing 4.35–4.40, tail 5.00–5.10, exposed culmen .80, tarsus 1.40–1.50, middle toe .90. *Hab.* Socorro Island, western Mexico.

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[1] *Mimus gilvus, γ. lawrencei* Ridgw., Proc. U. S. Nat. Mus. v. June 5, 1882, 11.

[2] *Mimus gracilis* Cab., Mus. Hein. i. Jan. 1851, 83.

[3] *Mimus gundlachii* Cab., Journ. für Orn. 1855, 470.

[4] *Mimodes* Ridgw., Proc. U. S. Nat. Mus. v. June 12, 1882, 45. Type, *Harporhynchus graysoni* Baird.

M. graysoni (BAIRD). **Socorro Thrasher.**[1]

GENUS **HARPORHYNCHUS** CABANIS. (Page 539, pl. CXX., figs. 3, 5.)

Species.

(*Nest* very bulky, composed of dried twigs, rootlets, etc. (the material varying with the locality or according to the species), placed in small, usually thorny, trees, vines, or bushes. *Eggs* very variable in coloration, but usually speckled.)

a^1. Tarsus longer than exposed culmen; gonys much shorter than middle toe, without claw; tail exceeding wing by not more than length of tarsus; lower parts more or less distinctly spotted or streaked (these markings sometimes obsolete in *H. bendirei* and *H. palmeri*). (Subgenus *Methriopterus* REICH.)

b^1. Above reddish brown; both rows of wing-coverts distinctly tipped with white, this preceded by a dusky bar; markings on lower parts linear, wedge-shaped, or tear-shaped.

c^1. Culmen curved for the terminal half only, and not longer than middle toe without claw; gonys perfectly straight; above bright tawny brown or rusty cinnamon; beneath buffy white, or pale buff, the markings on sides of breast usually brownish; length about 10.50–12.00, wing 4.10–4.60 (4.31), tail 5.00–5.75 (5.32), exposed culmen .90–1.10 (.99), tarsus 1.28–1.40 (1.36). *Eggs* 1.06 × .78, greenish white, very pale greenish, pale buffy, etc., minutely speckled or sprinkled with reddish brown (this sometimes the prevailing color). *Hab.* Eastern United States, west to base of Rocky Mountains, north to southern Maine, Ontario, and Manitoba; winters in more southern States (north to about 37°).

705. **H. rufus** (LINN.). **Brown Thrasher.**

c^2. Culmen decidedly curved from the base, and decidedly longer than middle toe, with claw; gonys appreciably concave; above dull umber-brown, somewhat more rusty on wings and tail; beneath pure white, the markings on sides of breast (and elsewhere) deep black.

d^1. Wing 3.80, or more, tail 4.80, or more; basal portion of lower mandible light horn-color, or otherwise pale-colored; length about 10.50–12.00, wing 3.80–4.20, tail 4.80–5.45, culmen 1.05–

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[1] *Harporhynchus graysoni* "BAIRD, MS.," LAWR., Ann. Lyc. N. Y. x. 1871, 1.

1.28, tarsus 1.35–1.45. *Eggs* 1.07 × .78, colored like those of *H. rufus*. *Hab.* Lower Rio Grande Valley, in Texas.

706. **H. longirostris sennetti** Ridgw. **Texas Thrasher.**

d^2. Wing 3.55, or less, tail 4.45, or less; lower mandible wholly black; colors darker, the markings more sharply defined; wing 3.40–3.55, tail 4.10–4.45, culmen 1.20–1.25, tarsus 1.15–1.25. *Hab.* Cozumel Island, Yucatan.

H. guttatus Ridgw. **Cozumel Thrasher.**[1]

b^2. Above brownish gray.

c^1. Markings on lower parts sharply defined, much darker than color of back. (Outer tail-feathers with white terminal spots; wings with two distinct white bands.)

d^1. Markings of lower parts roundish; under tail-coverts spotted; wing 4.10, tail 5.60, much graduated; exposed culmen 1.15, tarsus 1.50. *Hab.* Southwestern Mexico (Oaxaca).

H. ocellatus Scl. **Ocellated Thrasher.**[2]

d^2. Markings of lower parts triangular or wedge-shaped; under tail-coverts without spots; length about 10.00, wing 3.90–4.15, tail 4.35–4.60, moderately graduated, culmen 1.10–1.12, tarsus 1.25–1.40. *Eggs* 1.06 × .75, greenish white, spotted with pale reddish brown. *Hab.* Lower California.

(86.) 709. **H. cinereus** Xantus. **St. Lucas Thrasher.**

c^2. Markings on lower parts indistinct (sometimes nearly if not quite obsolete), or else not darker than color of back.

d^1. Lower mandible with basal portion light-colored; exposed culmen .95, or less, bill from nostril less than .85.

Adult: Above plain grayish brown, the middle and greater wing-coverts with indistinctly paler tips; beneath much paler grayish brown, becoming nearly white on chin and throat and middle of belly, buffy on under tail-coverts, and more decidedly brown on flanks, the chest and breast (sometimes upper belly also) marked with triangular spots or streaks of deeper grayish brown (these markings usually indistinct—sometimes quite obsolete—in summer plumage); inner webs of two or three outer tail-feathers tipped with dull whitish. *Young:* Similar to adult, but wing-coverts and rump tinged with tawny buff, tertials edged with same, and lower parts usually whiter, with narrower (and sometimes much darker) streaks. Length about 9.50–10.50, wing 3.90–4.20, tail 4.25–4.90, exposed culmen .87–.95, bill from nostril .75–.81, tarsus 1.30–1.40. *Eggs* 1.05 × .76, similar to those of *H. cinereus*, but ground-color averaging paler, or more decidedly whitish. *Hab.*

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[1] *Harporhynchus guttatus* Ridgw., Descr. New Sp. B. Cozumel, Feb. 26, 1885, 1.

[2] *Harporhynchus ocellatus* Scl., P. Z. S. 1862, 18, pl. 3.

Southern Arizona, south into Sonora (Guaymas), northeastward (casually only ?) to eastern Colorado.
708. **H. bendirei** Coues. **Bendire's Thrasher.**

*d*². Lower mandible entirely dusky; exposed culmen more than 1.05, bill from nostril .85, or more (usually more than 1.00).

*e*¹. Inner webs of outer tail-feathers without sharply defined white or buffy tips; ground-color of lower parts pale grayish brown; middle and greater wing-coverts never distinctly tipped with white.

In color very much like *H. bendirei*, but markings on breast, etc., usually broader; length about 11.00–11.50, wing 4.20–4.60 (4.32), tail 4.80–5.20 (4.99), exposed culmen 1.18–1.40 (1.28), bill from nostril 1.00–1.05 (1.01), tarsus 1.20–1.35 (1.29). *Eggs* 1.15 × .79, pale bluish green, finely and uniformly speckled with brown. *Hab.* Southern Arizona, and south into Sonora (Guaymas) .... 707*a*. **H. curvirostris palmeri** Ridgw. **Palmer's Thrasher.**

*e*². Inner webs of outer tail-feathers with sharply defined white or buffy tips, or else middle and greater wing-coverts distinctly tipped with white; ground-color of lower parts whitish or buffy, shaded across chest and along sides with brownish gray; spots on lower parts larger and more distinct (except in summer plumage, when sometimes obsolete); bill stouter and straighter.

*f*¹. Smaller, grayer above, whitish beneath (becoming buffy posteriorly), and tail-spots pure white. *Young:* Similar to adult, but wing-coverts and rump tinged with fulvous-brownish, and markings on breast, etc., much narrower and darker. Length about 10.50–11.40, wing 4.15–4.55 (4.36), tail 4.40–4.65 (4.55), exposed culmen 1.10–1.30 (1.18), bill from nostril .85–1.05 (.95), tarsus 1.25–1.35 (1.31). *Eggs* 1.10 × .78, colored like those of *H. palmeri*. *Hab.* Table-lands of Mexico, south to Puebla, Guanajuato, etc., north to southern Texas and New Mexico (east of Rocky Mountains). 707. **H. curvirostris** (Swains.). **Curve-billed Thrasher.**

*f*². Larger, browner above, brownish buffy beneath, and tail-spots usually brownish buff; length about 11.50, wing 4.45–4.70 (4.56), tail 5.00–5.20 (5.10), exposed culmen 1.12–1.30 (1.20), bill from nostril .90–1.15 (1.02), tarsus 1.40. *Hab.* Coast of western Mexico (Mazatlan, Tepic, etc.).
H. curvirostris occidentalis Ridgw. **Mazatlan Thrasher.**[1]

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[1] *Methriopterus curvirostris occidentalis* Ridgw., Proc. U. S. Nat. Mus. v. June 5, 1882, 9.

a^2. Tarsus shorter than exposed culmen; gonys longer than middle toe, without claw; tail exceeding wing by more than length of tarsus; lower parts without trace of spots or streaks. (Subgenus *Harporhynchus.*)

b^1. Lower tail-coverts light fulvous or ochraceous.

c^1. Tarsus 1.50, or more; middle toe .95, or more; tail only slightly darker than back; lower parts dull ochraceous buffy, becoming more fulvous on under tail-coverts, and buffy whitish on throat, the breast, etc., shaded with grayish brown; ear-coverts dusky, with distinct whitish shaft-streaks; no distinct lighter malar streak nor darker streak along sides of throat; upper parts deep grayish brown, the tail somewhat darker and browner; length about 11.50–13.00, wing 3.90–4.30 (4.13), tail 4.90–5.80 (5.34), culmen 1.35–1.75 (1.56), tarsus 1.40–1.60 (1.50), middle toe .95–1.12 (1.01). *Eggs* 1.20 × .85, light greenish blue, speckled with clove-brown. *Hab.* Coast district of California, south along Pacific coast of Lower California.

710. **H. redivivus** (Gamb.). **Californian Thrasher.**

c^2. Tarsus much less than 1.50, middle toe less than .95; tail much darker than back (but scarcely browner); lower parts pale brownish gray, becoming dull white on chin, throat, and belly, the under tail-coverts ochraceous-buff, in marked contrast; ear-coverts light brownish gray, without distinct streaks; a distinct malar stripe of whitish, narrowly barred with dusky, bordered below by a distinct dusky streak along each side of throat; upper parts plain delicate light grayish brown or brownish gray, the tail dusky, in marked contrast. *Young:* Similar to adult, but upper tail-coverts more rusty, and ochraceous of posterior lower parts paler. Length about 10.50–11.00, wing 3.70–3.90, tail 4.57–5.20, culmen 1.08–1.35, tarsus 1.12–1.25, middle toe .80–.88. *Nest* very bulky, composed of thorny twigs, and placed in bushes. *Eggs* 1.07 × .76, pale bluish green or greenish blue, minutely (usually rather sparsely) speckled with reddish brown. *Hab.* Valleys of Gila and lower Colorado rivers, and south into Sonora.. 711. **H. lecontei** (Lawr.). **Leconte's Thrasher.**

b^2. Lower tail-coverts deep rusty cinnamon, or chestnut.

Adult: Above plain brownish gray or grayish brown, the tail darker; beneath similar, but paler, the chin and throat nearly white, and the under tail-coverts deep rusty cinnamon or chestnut; a whitish malar stripe, and beneath it a dusky streak along each side of throat. *Young:* Similar to adult, but more tinged with rusty above, especially on rump and tips of tail-feathers, and lower parts more fulvous. Length about 11.40–12.60, wing 3.90–4.10 (4.02), tail 4.80–6.40 (5.67), exposed culmen 1.20–1.50 (1.39), bill from nostril 1.02–1.25 (1.14), tarsus 1.28–1.30 (1.29). *Eggs* 1.07 × .75, plain pale greenish blue. *Hab.* New Mexico, Arizona, southern Utah, southeastern California, and northern Lower California.

712. **H. crissalis** (Henry). **Crissal Thrasher.**

GENUS **HELEODYTES** CABANIS.[1] (Page 539, pl. CXXI., fig. 1.)

Species.

COMMON CHARACTERS.—Largest of the Wrens (length 7.00 to nearly 8.00); top of head plain brown (varying in tint from sepia to burnt-umber); back lighter brown, streaked with white and black; wings spotted with pale grayish brown and whitish on a dusky ground; middle tail-feathers brownish gray, transversely spotted with black; rest of tail black, transversely spotted or broadly barred, more or less, with white; a conspicuous white superciliary stripe, bordered beneath by a dusky line; anterior lower parts white, more or less spotted with black; posterior lower parts pale cinnamon-buff, or very pale buff, more sparsely marked with black. *Young* essentially like adults, but streaks on back much less sharply defined, markings on lower parts smaller, and colors generally more suffused. *Nest* very bulky, more or less flask-shaped, of more or less horizontal position, the entrance at one end; placed in a cactus or other thorny shrub; composed of sticks, coarse straws, etc., lined with feathers, etc. *Eggs* with the ground-color whitish, creamy white, or salmon-buff, but this often nearly if not quite hidden by the density of the reddish brown sprinkling, the general hue being a light brownish pink.

a^1. Only the outer tail-feather with white bars for whole length, and even on this these bars complete, or uninterrupted, only on terminal portion; flanks deep buff, marked with narrow streaks or small spots (or both) of blackish; throat and chest usually heavily spotted with black, in marked contrast with rest of lower parts; top of head sepia-brown (rarely varying to a burnt-umber or vandyke tint); length about 8.00–8.75, wing 3.30–3.50, tail 3.25–3.50, exposed culmen .80–.95, tarsus 1.05–1.12. *Eggs* .95 × .66. *Hab.* Southwestern border of United States, from southern Texas to coast of southern California, and south into northern and central Mexico (as far as Guanajuato, Guaymas, etc.)...... 713. **H. brunneicapillus** (LAFR.). **Cactus Wren.**

a^2. All the tail-feathers, except middle pair, barred with white for their whole length; flanks white or very pale buff, marked with large rounded or tear-shaped spots of black; throat and chest usually not more heavily or conspicuously spotted with black than other lower parts; top of head usually burnt-umber brown, sometimes almost chestnut; length 7.50–8.00, wing 3.35–3.50, tail 3.20–3.40, exposed culmen .80–.90, tarsus 1.12–1.20. *Eggs* .95 × .66. *Hab.* Southern portion of Lower California.

(87.) 714. **H. affinis** XANTUS. **St. Lucas Cactus Wren.**

GENUS **SALPINCTES** CABANIS. (Page 540, pl. CXXI., fig. 2.)

Species.

COMMON CHARACTERS.—*Adult:* Above grayish brown, more or less speckled (usually sparsely) with dusky, the rump light cinnamon, the tail with large blotches of black and pale cinnamon, except middle feathers, which are narrowly barred with brownish gray and dusky; beneath dull whitish, tinged on flanks with pale cinnamon, the lower tail-coverts barred, or transversely spotted, with blackish, and the chest usually more or less speckled or streaked with dusky (sometimes immaculate). *Young* with top of head, hind-neck, and back plain rusty grayish, and the lower parts plain whitish anteriorly, plain pale cinnamon on flanks and under tail-coverts. *Nest* usually in clefts or crevices among rocks, sometimes in hollow stumps or about buildings. *Eggs* pure white, finely and sparsely speckled, chiefly on or round larger end, with chestnut-brown (sometimes nearly immaculate).

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[1] *Heleodytes* CABAN., Mus. Hein. i. 1850, 80. Type, *Furnarius griseus* SWAINS. (*Cf.* PALMER, Auk, x. 1893, 86.)

*a*¹. Lighter and grayer, with chest, etc., less distinctly speckled; wing and tail longer, bill and tarsi shorter; length 5.12–6.35, wing 2.68–2.80 (2.77), tail 2.12–2.40 (2.27), bill from nostril .44–.54 (.49), tarsus .76–.80 (.79), middle toe .52–.60 (.56). *Eggs* .73 × .57. *Hab.* Arid regions of western United States, east to the Great Plains, south over table-lands of Mexico and Guatemala to Salvador.................................... 715. **S. obsoletus** (SAY). **Rock Wren.**

*a*². Darker and browner, with chest, etc., more distinctly speckled; wing and tail shorter, bill and tarsi longer; wing 2.55–2.75 (2.62), tail 2.00–2.30 (2.20), bill from nostril .55–.60 (.59), tarsus .80–.90 (.85), middle toe .50–.55 (.52). *Eggs* .75 × .59, usually (?) plain white. *Hab.* Guadalupe Island, Lower California. 716. **S. guadeloupensis** RIDGW. **Guadalupe Rock Wren.**

GENUS **CATHERPES** BAIRD. (Page 540, pl. CXXI., fig. 4.)

Species.

COMMON CHARACTERS.—Prevailing color brown, the anterior lower parts white, or else decidedly paler than posterior portions, the latter more or less speckled with white or dusky (sometimes both); tail (in *C. mexicanus*[1]) clear cinnamon-rusty, crossed by narrow, distinct, and rather distant bars of black. *Young* essentially like adults, but usually without white specks on upper parts or posterior lower parts, which are instead mottled, more or less, with dusky. *Nest* in crevices of rocks, various odd nooks about buildings, and similar situations. *Eggs* 3–5, or more, pure white, rather sparsely speckled, chiefly on larger end, with reddish brown and lilac-gray.

*a*¹. Smaller (exposed culmen less than 1.00, tarsus not more than .80); chin, throat, and chest white, in marked (though not abrupt) contrast with rusty of posterior lower parts; upper parts brownish (varying from light cinnamon-grayish to rusty brown and sepia), speckled with white and dusky (with dusky alone in young); wings rusty brown, narrowly barred with dusky.

*b*¹. Larger and darker colored; above dark rusty brown, varying to sepia, the wings barred with rusty; black bars on tail broader, those on outer feather about .08–.10 wide; length about 6.00–6.50, wing 2.40–2.90 (2.72), tail 2.30–2.45 (2.37), exposed culmen .70–.95 (.87), bill from nostril .55–

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[1] In the single known specimen of *C. sumichrasti* LAWR. the tail is, unfortunately, wanting.

.75 (.69), tarsus .70–.80 (.77), middle toe .55–.62 (.60). *Hab.* Mexico; southern Texas.. 717. **C. mexicanus** (Swains.). **White-throated Wren.**

*b*². Smaller and lighter colored; above varying from dull brown to cinnamon-grayish, the wings cinnamon-rusty, narrowly barred with dusky; black bars on tail narrower, those on outer feather usually less than .05 wide; length about 5.50–5.75, wing 2.20–2.40 (2.32), tail 2.00–2.40 (2.14), exposed culmen .70–.85 (.76), bill from nostril .50–.66 (.58), tarsus .65–.72 (.69), middle toe .48–.58 (.51). *Eggs* .70 × .52. *Hab.* Southwestern United States, north to Wyoming, southern Idaho and Oregon, and northern California, east to western Texas, Colorado, etc., south to Mexican boundary and Lower California. (Resident throughout.) 717*a*. **C. mexicanus conspersus** Ridgw. **Cañon Wren.**[1]

*a*². Larger (exposed culmen 1.10, tarsus 1.15); chin and throat pale tawny brown, chest brighter tawny brown or russet; upper parts plain dark vandyke-brown, becoming nearly black posteriorly and on wings, the latter without distinct bars or other markings; posterior lower parts deep bistre or vandyke (nearly black on thighs and flanks), the belly speckled with white; wing 2.80, middle toe .90. *Hab.* Southeastern Mexico (Mata Bejuco, Vera Cruz). **C. sumichrasti** Lawr. **Sumichrast's Wren.**[2]

Genus **THRYOTHORUS** Vieillot. (Page 540, pl. CXXI., figs. 3, 5.)

Species.

Common Characters.—Above plain brown (rump sometimes with concealed white spots), the tail barred, more or less distinctly, with dusky; a sharply defined superciliary stripe of white or buffy; color of lower parts very variable. *Young* not essentially different from adults. *Nest* bulky, composed of sticks, spiders' webs, feathers, etc., built in some cavity, as a hole in stump or hollow tree, various odd nooks in buildings, etc. *Eggs* whitish, more or less speckled.

*a*¹. Feathers of rump with very distinct concealed white spots.

*b*¹. Tail-feathers rusty brownish, narrowly barred for entire length with dusky and lighter rusty. (Subgenus *Thryothorus*, part.)

*c*¹. Smaller and lighter colored; above rusty brown (varying much in shade), duller on top of head, brighter on rump; an indistinct blackish line along each side of crown, bordering the white or buffy superciliary stripe; wings narrowly and indistinctly barred with dusky, the quills with pale rusty or rusty whitish spots;

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[1] Specimens from Colorado, Utah, Nevada, and other parts of the arid interior region alone constitute the true *C. conspersus;* examples from California, Lower California, Arizona, and New Mexico are much darker (being in coloration more like the true *C. mexicanus*), the difference being very marked and, so far as the large number of specimens now before me are concerned, quite constant. The latter constitute the *C. mexicanus punctulatus* Ridgw. (Proc. U. S. Nat. Mus. v. Sept. 5, 1882, 343), a race which will probably, in due time, be generally recognized.

[2] *Catherpes sumichrasti* Lawr., Pr. Ac. Nat. Sci. Phil. 1871, 233.

middle and greater wing-coverts usually marked with small terminal white spots; a broad rusty brown stripe behind eye; lower parts varying from dull white to deep tawny buff (the chin always whitish); lower tail-coverts barred with dusky; length 5.25–6.00, wing 2.18–2.50 (2.35), tail 1.80–2.35 (2.09), exposed culmen .60–.70 (.64), tarsus .72–.88 (.81). *Nest* usually in woods. *Eggs* 3–6, .75 × .58, white, pinkish white, creamy white, or pale pinkish cream-color, thickly speckled, on or round larger end, with reddish brown. *Hab.* Eastern United States, except southeastern Florida; rare or local north of about 40°; west to edge of Great Plains; south to Gulf coast, including northeastern Mexico (Nuevo Leon and Tamaulipas[1])................. 718. **T. ludovicianus** (Lath.). **Carolina Wren.** (88.)

*c*². Larger, and darker colored; above deep chestnut, beneath deep tawny, paler (more buffy) on belly and under tail-coverts; superciliary stripe buff; otherwise like *T. ludovicianus;* length about 5.80–6.50, wing 2.45–2.75 (2.61), tail 2.25–2.60 (2.43), exposed culmen .70–.80 (.78), tarsus .85–.95 (.88). *Hab.* Southeastern Florida.

718*a*. **T. ludovicianus miamensis** Ridgw. **Florida Wren.**

*b*². Tail-feathers (except middle pair) chiefly plain blackish, the outer feathers spotted and barred at tip with light grayish and dull whitish. (Middle pair of tail-feathers grayish brown or brownish gray, barred or transversely spotted with black or dusky.) (Subgenus *Thryomanes* Sclater.)

*c*¹. Tail decidedly shorter than wing.

Above deep umber-brown (more grayish in worn plumage), the middle tail-feathers grayer, barred or transversely spotted with dusky; superciliary stripe and streaks on side of neck white; lower parts brownish white, becoming more strongly tinged with brownish posteriorly, especially on flanks; length about 5.10–5.50, wing 2.30–2.40, tail 2.05–2.15, exposed culmen .65–.68, tarsus .80. *Hab.* Yucatan, and adjacent portions of Guatemala and Mexico.

T. albinucha (Cabot). **Cabot's Wren.**[2]

*c*². Tail equal to or longer than wing. (*Nest* usually about buildings, except in unsettled districts. *Eggs* 5–7—rarely 9—pure white or pinkish white, finely, often very minutely, speckled or sprinkled on or round larger end with reddish brown and lilac-gray.)

*d*¹. Top of head, back, etc., deep umber-brown; length 5.00–5.50, wing 2.05–2.25 (2.14), tail 2.10–2.40 (2.21), exposed culmen .50–.55

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[1] Specimens from northeastern Mexico constitute the *T. berlandieri* Baird, which will probably prove tenable as a race, the three specimens upon which the species was based, although in worn breeding plumage, being much deeper rusty ochraceous beneath even than in winter specimens of *T. ludovicianus*, and also different in some other characters. All Texan specimens, however, that I have seen, including several from the lower Rio Grande (Sennett), are so like the ordinary northern birds that I am unable to appreciate any difference.

[2] *Troglodytes albinucha* Cabot, Proc. Bost. Soc. N. H. ii. 1847, 258. *Thryothorus albinucha* Baird, Rev. 1864, 149; Salv. & Godm., Biol. Centr.-Am., Aves, i. 1880, 94, pl. 7, fig. 2.

(.53), tarsus .62–.75 (.67). *Eggs* .67 × .50. *Hab.* Eastern United States, rare and local east of Alleghanies and north of 40°; west to edge of Great Plains; winters in more southern districts (Georgia to eastern Texas).

719. **T. bewickii** (Aud.). **Bewick's Wren.**

d^2. Top of head, back, etc., duller or grayer brown.

e^1. Decidedly brown above (of a shade closely approximating a medium tint of bistre), the middle tail-feathers more grayish brown, similar to or in very slight contrast with color of back; flanks strongly brownish; length about 5.00–5.50, wing 2.00–2.15 (2.08), tail 2.08–2.30 (2.15), exposed culmen .52–.60 (.55), tarsus .62–.75 (.72). *Eggs* .64 × .50. *Hab.* Pacific coast, north to British Columbia, south to San Francisco.

(89.) 719*a*. **T. bewickii spilurus** (Vig.). **Vigor's Wren.**

e^2. More grayish brown above, the upper tail-coverts and middle tail-feathers distinctly gray (often pure ash-gray), in decided contrast with color of back; flanks ash-gray; length 5.00–5.75, wing 2.10–2.40 (2.21), tail 2.10–2.55 (2.28), exposed culmen .50–.60 (.56), tarsus .68–.78 (.70). *Eggs* .65 × .49. *Hab.* Table-lands of Mexico and contiguous portions of United States (southern and western Texas to southern California, and north to southern Utah, Colorado, and middle Kansas).

719*b*. **T. bewickii bairdi** Salv. & Godm. **Baird's Wren.**[1]

a^2. Feathers of rump without distinct (if any) concealed white spots.

b^1. Wing less than 2.00; flanks dull ash-gray; tail dull grayish brown, narrowly and indistinctly barred with dusky, the two or three outer feathers spotted at tips with light brownish gray, their inner webs nearly uniform dusky. (Subgenus *Thryomanes* Scl., part?)

Very similar, otherwise, in color to *T. bewickii spilurus*; length about 4.50, wing 1.85–1.90, tail 1.80, exposed culmen .67–.70, tarsus .70–.75. *Hab.* Guadalupe Island, Lower California.

720. **T. brevicaudus** Ridgw. **Guadalupe Wren.**

b^2. Wing decidedly more than 2.00; flanks buffy, ochraceous, or brown; tail brown, broadly barred with dusky. (Subgenus *Thryothorus*, part?)

c^1. Lower parts unspotted. (Above grayish brown, more russet on top of head.)

d^1. Lower parts ochraceous, paler along middle line, and white on chin and throat; sides of head heavily streaked with black, the throat bordered laterally by a distinct black line; length about 5.00–5.50, wing 2.10–2.35, tail 2.25–2.35, bill from nostril .39–

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[1] Specimens from western Mexico (Guadalajara) are not typical, being much larger than those from California and Lower California, the wing averaging 2.27, the tail 2.28, and exposed culmen .59; their coloration, however, is not obviously different.

.42, tarsus .80–.90. *Hab.* Western Mexico (mainland, Mazatlan to Oaxaca).

T. felix Scl. **Happy Wren.**[1]

d^2. Lower parts white, the sides and flanks tinged with ochraceous; sides of head (below upper margin of ear-coverts) immaculate white, or else very indistinctly streaked; black line along side of throat indistinct or (usually) altogether wanting; length about 5.50–5.75, wing 2.30–2.45, tail 2.30–2.45, bill from nostril .45–.48, tarsus .80. *Hab.* Tres Marias Islands, western Mexico.

T. lawrencii (Ridgw.). **Tres Marias Wren.**[2]

c^2. Chest and breast spotted with black.

d^1. Back umber-brown, top of head deep russet; tail light brown, broadly barred with black; flanks umber-brown.

e^1. Less intense brown above, flanks rather paler brown, and less heavily spotted on chest, etc.; wing 2.20–2.40, tail 1.95–2.10, exposed culmen .55–.62, tarsus .85–.90. *Hab.* Southern Mexico (Oaxaca, Tehuantepec, Orizaba, etc.).

T. maculipectus Lafr. **Spotted-breasted Wren.**[3]

e^2. More intense brown above and on flanks, and more heavily spotted on chest, etc.; wing 2.30–2.50, tail 2.05–2.20, exposed culmen .65–.68, tarsus .85–.90. *Hab.* Guatemala (also Honduras and Nicaragua, and Salvador?).

T. maculipectus umbrinus Ridgw. **Umber Wren.**[4]

d^2. Back lighter, more grayish, brown (nearly a hair-brown tint); top of head light russet-brown; tail brownish gray, broadly barred with black; flanks pale brown.

Breast, etc., rather sparsely spotted, as in *T. maculipectus* proper; wing 2.30–2.35, tail 2.10–2.15, exposed culmen .62, tarsus .80–.85. *Hab.* Yucatan.

T. maculipectus canobrunneus Ridgw. **Temax Wren.**[5]

Genus **TROGLODYTES** Vieillot. (Page 540, pl. CXXI., figs. 7, 8.)

Species.

Common Characters.—Above brown, more or less distinctly barred with darker on wings and tail (sometimes on back also); beneath varying from mostly, or entirely, white, to deep brownish, plain, or (usually) more or less varied (chiefly on posterior portions) with darker and lighter bars or specks.

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[1] *Thryothorus felix* Scl., P. Z. S. 1859, 371.

[2] *Thryothorus felix β. lawrencii* Ridgw., Bull. Nutt. Orn. Club, iii. Jan. 1878, 10. *Thryothorus lawrencii* Salv. & Godm., Biol. Centr.-Am. i. Apr. 1880, 93.

[3] *Thryothorus maculipectus* Lafr., Rev. Zool. 1845, 338.

[4] New subspecies. Honduras specimens are probably referable to this form, but I have not been able to examine any from that country. An example from "Central America" (probably from Nicaragua) collected by F. Hicks (Nat. Mus. No. 40973) agrees closely with the darker-colored examples from Guatemala, but the spotting on breast is still heavier and apparently extends backward over whole abdomen.

[5] New subspecies; type No. 106243, U. S. Nat. Mus., Temax, Yucatan, G. F. Gaumer.

a^1. Tail more than three-fourths as long as wing. (Subgenus *Troglodytes.*)

b^1. Exposed culmen equal to or longer than middle toe, with claw.

c^1. Flanks plain dull white, like rest of lower parts, and lower tail-coverts very slightly, if at all, barred; above dull grayish brown, the wings and tail very distinctly barred with dusky; superciliary stripe and entire lower parts dull white, the latter tinged laterally with pale buffy brownish; length about 4.50, wing 1.90–2.04 (1.95), tail 1.72–1.85 (1.82), exposed culmen .60–.64 (.62), tarsus .70–.81 (.76). *Hab.* Socorro Island, western Mexico.

T. insularis BAIRD. **Socorro Wren.**[1]

c^2. Flanks pale brown or fawn-color, usually indistinctly barred with darker; lower tail-coverts very distinctly barred with dusky; above dull grayish brown anteriorly, passing gradually into a decidedly more reddish, or burnt-umber, tint on rump, wings, and tail, the two last barred with dusky; lower parts nearly pure white (quite pure on throat), except as described above; an indistinct pale brownish superciliary stripe; length about 5.00, wing 2.10–2.20, tail 1.85–1.90, exposed culmen .60–.68, tarsus .80–.85. *Hab.* Cozumel Island, Yucatan.

T. beani RIDGW. **Cozumel Wren.**[2]

b^2. Exposed culmen decidedly shorter than middle toe, with claw.

c^1. No distinct superciliary stripe.

d^1. Lower parts dull white, or dull brownish white, the sides and chest usually tinged with pale grayish brown, and often slightly barred with darker. *Nest* in cavities, usually in holes of trees, often in "odd nooks and corners" about buildings, composed of dried twigs, and various sorts of "rubbish," lined with soft feathers, etc. *Eggs* 5–7, pinkish white, light vinaceous, or pinkish cream-color, thickly (usually minutely and densely) speckled or sprinkled with reddish brown, the prevailing color usually nearly uniform vinaceous, with a more or less distinctly deeper colored wreath round larger end.

e^1. Above dull umber-brown, more rusty on rump and tail, the back usually without distinct darker bars (often entirely uniform); length 4.25–5.25, wing 1.90–2.15 (2.02), tail 1.72–2.08 (1.85), exposed culmen .46–.52 (.49), bill from nostril .32–.37 (.34), tarsus .60–.70 (.65). *Eggs* .65 × .50. *Hab.* Eastern United States and southern Canada, west to Mississippi Valley (Michigan to Louisiana), wintering in more southern portions... 721. **T. aëdon** VIEILL. **House Wren.**

e^2. Above grayish brown, the rump and tail more decidedly brown, but not distinctly rusty, the back usually distinctly barred with darker; length 4.25–5.25, wing 2.00–

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[1] *Troglodytes insularis* "BAIRD, MS." LAWR., Ann. Lyc. N. Y. x. 1871, 3.

[2] *Troglodytes beani* RIDGW., Descr. N. Sp. B. Cozumel, Feb. 26, 1885, 1.

2.25 (2.09), tail 1.85–2.12 (1.98), culmen .45–.55 (.49), bill from nostril .30–.40 (.35), tarsus .60–.70 (.66). *Eggs* .64 × .48. *Hab.* Western United States, east to Mississippi Valley (Minnesota, Illinois, etc.), south over table-lands of Mexico, as far as Vera Cruz.

(90.) 721*a*. **T. aëdon parkmanii** (Aud.). **Parkman's Wren.**

*d*². Lower parts isabella-color, deeper on sides, the middle of the belly whitish; otherwise much like *T. aëdon;* length about 4.50, wing 1.95–2.10, tail 1.50–1.70, exposed culmen .50–.55, tarsus .70–.80. *Hab.* Southern Mexico (Oaxaca, Yucatan, etc.) to Costa Rica.

T. intermedius Cab. **Central American House Wren.**[1]

*c*². A very distinct superciliary stripe of buffy or ochraceous.

*d*¹. Above umber-brown, barred, except on head and neck, with darker; lower parts deep tawny buff, deepest on throat and chest, paler (sometimes nearly white) on middle of belly; flanks and under tail-coverts distinctly barred with dusky, whitish, and tawny buff. *Young:* "Very similar to adult . . . but darker on the upper surface and mottled underneath, the feathers of the breast and sides edged and barred with blackish, producing a somewhat banded appearance; under tail-coverts nearly uniform rufous; throat and centre of breast and abdomen paler, and . . . obscurely barred with dusky blackish." (Sharpe.) Length about 4.25–4.50, wing 1.90–2.08 (2.01), tail 1.60–1.82 (1.75), exposed culmen .50–.52 (.51), tarsus .70–.74 (.71). *Hab.* Southeastern Mexico (Puebla, Orizaba, Oaxaca, etc.).

T. brunneicollis Scl. **Tawny-throated Wren.**[2]

*d*². Darker and richer colored, the tail "dark rufous-brown, barred with black," the superciliary stripe and lower parts "deep orange-rufous." *Young:* "Lighter and more rufescent, the back barred with dusky blackish, the feathers of the head having blackish margins;" lower parts "plentifully mottled, all the feathers being margined with dusky blackish." Length 4.40, "culmen .55, wing 1.85, tail 1.50, tarsus .70." *Hab.* Highlands of Guatemala.

T. rufociliatus Sharpe. **Rufous-browed Wren.**[3]

*a*². Tail less than three-fourths as long as wing. (*Nest* of moss, etc., lined with soft feathers, built in crevices of dead logs or stumps, in thick coniferous woods. *Eggs* 5–7, white or creamy white, finely but rather sparingly speckled with reddish brown, sometimes nearly immaculate). (Subgenus *Anorthura* Rennie.)

*b*¹. Exposed culmen not more than .45; above deep brown, duller anteriorly, brighter (a burnt-umber tint) on rump and upper tail-coverts, the wings and tail (often rump and back also) narrowly barred with dusky; outer webs of quills spotted with dusky and pale brownish or brownish white; superciliary stripe and lower parts pale isabella brownish, varying to dull light tawny, the belly, flanks, and under tail-coverts distinctly barred with blackish and whitish.

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[1] *Troglodytes intermedius* Cab., Jour. für Orn. 1860, 407.

[2] *Troglodytes brunneicollis* Scl., P. Z. S. 1858, 297.

[3] *Troglodytes rufociliatus* Sharpe, Cat. B. Brit. Mus. vi. 1881, 262. (Described as a subspecies of *T. brunneicollis.*)

*c*¹. Paler, with rather shorter bill; chin, throat, chest, and breast pale dull isabella-color, sometimes inclining to dull brownish white anteriorly; upper parts more rusty brown; length 3.50–4.12, wing 1.75–2.00 (1.86), tail 1.15–1.40 (1.25), exposed culmen .38–.45 (.41), bill from nostril .30–.32 (.30), tarsus .65–.75 (.68). *Eggs* .69 × .50. *Hab.* Eastern North America, breeding from northern border of United States northward, and wintering from about its southern breeding limit southward.
722. **T. hiemalis** Vieill. **Winter Wren.**

*c*². Darker, with rather longer bill; chin, throat, etc., deep isabella-color or dull tawny; upper parts darker, and less rusty, brown (almost a clear bistre shade anteriorly); length 3.60–4.25, wing 1.80–1.90 (1.84), tail 1.20–1.35 (1.24), exposed culmen .40–.45 (.42), bill from nostril .29–.35 (.31), tarsus .65–.70 (.69). *Eggs* .60 × .48. *Hab.* Pacific coast, breeding from southern coast ranges of California to Sitka; south, in winter, to western Mexico, east to eastern Oregon, Nevada, etc.
722*a*. **T. hiemalis pacificus** Baird. **Western Winter Wren.**

*b*². Exposed culmen .55, or more; in plumage very similar to *T. hiemalis pacificus*, but rather paler, especially on upper parts; length about 4.25–4.50, wing 2.05–2.15 (2.07), tail 1.30–1.50 (1.40), exposed culmen .55–.62 (.59), bill from nostril .40–.48 (.45), tarsus .70–.80 (.75). *Hab.* Aleutian and Prybilof Islands, Alaska.... 723. **T. alascensis** Baird. **Alaskan Wren.**

Genus **CISTOTHORUS** Cabanis. (Page 540, pl. CXXI., figs. 6, 9.)

Species.

Common Characters.—Above brown, the back streaked with black and white, the wings and tail more or less barred with blackish; lower parts whitish or buffy. *Nest* globular, with entrance in one side, attached to upright reeds, etc., in marshes.

*a*¹. Bill much shorter than head, the culmen much shorter than middle toe, without claw; hind claw not longer than its toe; lower parts buffy, or ochraceous, more whitish on throat and belly; *eggs* pure white, unspotted. (Subgenus *Cistothorus.*)

*b*¹. Upper tail-coverts dull brown, distinctly barred with dusky; rump similar, but more irregularly barred; hind-neck plain brownish, or (rarely) with very indistinct streaks; flanks and under tail-coverts dull buffy ochraceous, the latter (often the former also) immaculate; chest more or less tinged with ochraceous; length 3.75–4.50, wing 1.72–1.90 (1.78), tail 1.58–1.70 (1.61), culmen .40, bill from nostril .24–.28 (.25), tarsus .60–.62 (.61). *Eggs* .63 × .48. *Hab.* Eastern United States and more southern British Provinces, west to Great Plains (to Utah Lake, Utah?); wintering in Gulf States.

724. **C. stellaris** (LICHT.). **Short-billed Marsh Wren.**

b^2. Upper tail-coverts and rump rusty brown, sometimes barred with dusky, but usually quite plain; hind-neck usually distinctly streaked with dusky; chest scarcely, if at all, tinged with buff; otherwise like *C. stellaris;* wing 1.64–1.75 (1.72), tail 1.50–1.80 (1.63), culmen .41–.47 (.43), tarsus .65–.70 (.68). *Hab.* Eastern tropical America, from eastern Mexico (Vera Cruz) to Brazil, Bolivia, etc.

C. polyglottus (VIEILL.). **Southern Marsh Wren.**[1]

a^2. Bill as long as head, the culmen equal to or longer than middle toe, without claw; hind claw longer than the toe; lower parts pure white medially; *eggs* pale chocolate-brown or deeper chocolate, sometimes nearly uniform, but usually finely sprinkled with a deeper shade of the ground-color (the latter sometimes light isabella-color). (Subgenus *Telmatodytes* CABANIS.)

b^1. Culmen usually decidedly longer than middle toe, without claw; bars on middle tail-feathers usually indistinct or incomplete; tail-coverts (above and below) usually without distinct bars, sometimes with none at all; length 4.25–5.50, wing 1.80–2.12 (1.95), tail 1.60–1.90 (1.80), culmen .50–.61 (.54), bill from nostril .34–.41 (.38), tarsus .70–.80 (.76). *Eggs* .66 × .46. *Hab.* Eastern United States and British Provinces, wintering in Gulf States......... 725. **C. palustris** (WILS.). **Long-billed Marsh Wren.**

b^2. Culmen not decidedly, if any, longer than middle toe, without claw (sometimes a little shorter); bars on middle tail-feathers usually very distinct and continuous; tail-coverts (upper and lower) usually distinctly barred with blackish; brown of upper parts appreciably less rusty; length about 4.50–5.75, wing 1.95–2.22 (2.06), tail 1.80–2.05 (1.92), culmen .48–.55 (.51), bill from nostril .31–.37 (.34), tarsus .68–.78 (.72). *Eggs* .62 × .49. *Hab.* Western United States, east to Rocky Mountains (to Great Plains?); south, in winter, over table-lands of Mexico, to Guatemala.

(91.) 725*a*. **C. palustris paludicola** BAIRD. **Tule Wren.**[2]

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[1] *Thryothorus polyglottus* VIEILL., Nouv. Dict. xxiv. 1819, 59. *Cistothorus polyglottus* PELZ., Orn. Bras. 1871, 48.

[2] *Cistothorus palustris* var. *paludicola* BAIRD, Review Am. B. i. Sept. 1864, 148.

NOTE.—The vernacular name is derived from the Spanish word *tule*, meaning a kind of rush (*Scirpus validus*) which in the valleys of California and other portions of the western country forms extensive marshes. These marshes are called *tules*, pronounced as if spelled *too'lays.*

This race was not recognized by the A. O. U. Committee, but it rests on quite as good a basis as *Troglodytes aëdon parkmanii* and several other accepted forms.

FAMILY CERTHIIDÆ.—THE CREEPERS. (Page 322.)

Genera.

(Characters same as those given for the Family) .... **Certhia.** (Page 557.)

GENUS CERTHIA LINNÆUS. (Page 557, pl. CXXII., fig. 6.)

Species.

COMMON CHARACTERS.—Above brownish, streaked with paler, the rump plain rusty or fulvous; tail-feathers light grayish brown, with a darker mesial stripe; a broad bar or band of pale rusty, buffy, or whitish across both webs of quills and secondaries, the wing with various other light markings; a white superciliary stripe; lower parts plain whitish, the under tail-coverts usually more or less buffy; length about 4.80–5.50. *Nest* behind loosened bark or similar cavities about dead tree-trunks or stumps, composed of felted materials, soft feathers, etc. *Eggs* 5–9, about .60 × .48, white or creamy white, speckled or spotted, chiefly on or round larger end, with reddish brown.

a^1. Lower parts white, without grayish tinge (unless adventitiously stained or soiled); primary coverts distinctly tipped with whitish (except very rarely in Pacific coast specimens); rump tawny, and colors paler throughout; length 5.00–5.75, wing 2.40–2.70, tail 2.30–2.90, culmen .60–.82, tarsus .55–.65, hind-claw .28–.35. *Hab.* Whole of North America, in wooded districts, down to southern border of United States, but breeding only from northern border of United States northward, except in higher mountains.
726. **C. familiaris americana** (BONAP.). **Brown Creeper.**[1]

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[1] With nearly one hundred and fifty specimens now before me, I have no difficulty in recognizing very decided constant differences in colors and proportions according to region, my separation of the North American bird into three geographical races, besides that peculiar to Mexico and Guatemala (see Proc. U. S. Nat. Mus. v. 1882, pp. 111–116), being thus fully justified by the evidence of abundant additional material. One of these races (*C. familiaris occidentalis*) differs quite as much from the typical (eastern) bird as does the Mexican form, to which it cannot be referred; while the other, although less distinct in plumage, is sufficiently different in its proportions for recognition as a geographical race. The characters of the three races may be expressed as follows:

a^1. Lighter and more grayish in general cast of plumage, the lateral lower parts scarcely, if at all, tinged with brown, the streaks on upper parts clearer whitish or pale grayish, the rump more tawny, superciliary stripe more decidedly whitish, and wing-markings whitish or pale buffy.

  b^1. Browner above, with tawny of rump less distinctly contrasted with color of back; bill shorter and stouter, and wing and tail shorter; wing 2.40–2.70 (2.53), tail 2.50–2.90 (2.63), culmen .60–.70 (.66), bill from nostril .35–.47 (.39), tarsus .55–.60 (.59), hind-toe .27–.32 (.29), hind-claw .28–.35 (.31). *Eggs* .60 × .48. *Hab.* Eastern North America, breeding from northern border of United States northward.............................. 726. **C. familiaris americana** (BONAP.). **Brown Creeper.**

  b^2. Grayer above, with tawny of rump more distinctly contrasted with color of back; bill longer and slenderer, and wings and tail longer; wing 2.50–2.65 (2.56), tail 2.65–2.75 (2.71), culmen .70–.82

*a*². Lower parts pale brownish gray, becoming white only on chin and throat; primary coverts usually (always?) without whitish tips; rump deep rusty, almost chestnut, and colors throughout very dark, the prevailing color of upper parts dark sepia-brown; length about 4.80–5.60, wing 2.55–2.60 (2.58), tail 2.65, culmen .70–.73 (.71), bill from nostril .42–.48 (.44), tarsus .58–.60 (.59), hind-toe .30–.35 (.32), hind-claw .30–.35 (.32). *Hab.* Highlands of Guatemala and Mexico, north into southern Arizona.

726*a*. **C. familiaris alticola** Miller. **Mexican Creeper.**

Family **PARIDÆ**.—The Nuthatches and Tits. (Page 322.)

Genera.

*a*¹. Bill slender, long as the head; hind-toe longer than middle toe; tail much shorter than wing, varied with white and black. (Subfamily *Sittinæ*.) **Sitta.** (Page 559.)

*a*². Bill stouter, much shorter than the head; hind-toe shorter than middle toe; tail equal to or longer than wing, plain-colored.

- *b*¹. Nostrils concealed by feathers; tarsus with anterior covering scutellate on outer side; tail graduated for much less than half its length. (Subfamily *Parinæ*.[1])
  - *c*¹. Bill with either the culmen or the gonys (sometimes both) decidedly convex; nostrils wholly concealed; plumage very lax.
    - *d*¹. Tail not conspicuously longer than wing, rounded. **Parus.** (Page 560.)
    - *d*². Tail conspicuously longer than wing, graduated. **Psaltriparus.** (Page 564.)
  - *c*². Bill with both culmen and gonys nearly straight, the tip acute; nostrils partially exposed; plumage compact.. **Auriparus.** (Page 565.)
- *b*². Nostrils entirely exposed; tarsus with anterior covering fused or booted on outer side; tail graduated for about half its length. (Subfamily *Chamæinæ*.)... **Chamæa.** (Page 566.)

(.75), bill from nostril .40–.52 (.46), tarsus .58–.60 (.59), hind-toe .28–.30 (.29), hind-claw .30–.35 (.33). *Eggs* .59 × .46. *Hab.* Rocky Mountain district, north to Alaska, west to Nevada, etc.

726*b*. **C. familiaris montana** Ridgw. **Rocky Mountain Creeper.**

(*Certhia montana* Ridgw., Proc. U. S. Nat. Mus. v. July 8, 1882, 114.)

*a*². Darker and more rusty in general cast of plumage, the lateral lower parts more or less (often strongly) tinged with brownish, streaks on upper parts more brownish (often decidedly tawny), the rump more rusty, superciliary stripe more brownish (often bright tawny), and wing-markings decidedly buffy. Wing 2.40–2.50 (2.47), tail 2.30–2.70 (2.45), culmen .68–.80 (.[illegible]), bill from nostril .42–.50 (.44), tarsus .55–.65 (.59), hind-toe .28–.32 (.30), hind-claw .30–.35 (.32). *Eggs* .61 × .48. *Hab.* Pacific coast of North America, from southern California (in mountains) to Sitka.

726*c*. **C. familiaris occidentalis** Ridgw. **Californian Creeper.**

(*Certhia occidentalis* Ridgw., Proc. U. S. Nat. Mus. v. July 8, 1882, 115.)

[1] I have been obliged to assign different limits to the subfamilies *Parinæ* and *Chamæinæ* from those given in the A. O. U. Check List, on account of the impossibility of giving characters which would cover the extremely different genera there inadvertently placed under *Chamæinæ*. The latter properly includes only *Chamæa;* and it is extremely doubtful whether this genus has any real affinity with the *Paridæ*, its relationship being probably much nearer to the *Troglodytidæ*.

GENUS **SITTA** LINNÆUS. (Page 558, pl. CXXII., fig. 7.)

Species.

COMMON CHARACTERS.—Above plain bluish gray, the top of the head different (black, dusky grayish, olive-gray, or brownish); tail-feathers (except middle pair) tipped with white, the subterminal portion black; lower parts chiefly plain whitish, rusty, or dull buffy. *Nest* in holes of trees or stumps, composed of soft felted materials, feathers, etc. *Eggs* 5–8, white or creamy white, speckled with reddish brown.

*a*¹. Top of head glossy black in males, dark grayish in females.

*b*¹. Wing more than 3.30; sides of head entirely white, to above the eye; lower parts white, the lower tail-coverts spotted with chestnut-rufous; tertials marked with black.

*c*¹. Tertials light bluish gray, with large and sharply defined oblong blotches of black, that on outer web of third feather with a rounded terminal outline; white on side of neck tinged with grayish; length 5.25–6.15, wing 3.50–3.75 (3.60), tail 1.95–2.20 (2.05), culmen (from extreme base) .80–.90 (.84), bill from nostril .50–.60 (.53), greatest depth of bill .12–.15 (.14), tarsus .72–.75. *Eggs* .72 × .55. *Hab.* Eastern United States and British Provinces.

(92.) 727. **S. carolinensis** LATH. **White-breasted Nuthatch.**

*c*². Tertials dark or dull bluish gray, the black markings narrower and less sharply defined, that on outer web of third feather pointed posteriorly; back darker plumbeous; white on side of neck very pure, more sharply contrasted with black of nape; bill usually longer and more slender, the culmen straighter; length 5.00–6.10, wing 3.35–3.75 (3.54), tail 1.90–2.20 (2.05), culmen .80–.95 (.90), bill from nostril .50–.62 (.58), greatest depth of bill .12–.15 (.13), tarsus .70–.75 (.71). *Eggs* .71 × .54. *Hab.* Western United States, east to, and including, Rocky Mountains, south into mountainous districts of Mexico.

727*a*. **S. carolinensis aculeata** (CASS.). **Slender-billed Nuthatch.**

*b*². Wing less than 3.00; side of head with a broad black stripe, separated from the black (male) or dark grayish (female) of crown and nape by a broad white superciliary stripe; lower parts (except throat) light rusty or ochraceous; tertials plain gray; length 4.12–4.75, wing 2.60–2.85, culmen about .60. *Eggs* .59 × .46. *Hab.* Whole of North America, breeding chiefly north of the United States, except in western mountainous districts; eastern United States chiefly in winter.

728. **S. canadensis** LINN. **Red-breasted Nuthatch.**

*a*². Top of head (down to eyes and ear-coverts) brown or olive-grayish, bordered below by a darker loral and postocular streak; nape with more or less of a whitish spot; no superciliary stripe; sexes alike.

*b*¹. Top of head brown, the nape with a conspicuous white spot; middle tail-feathers without distinct basal spot of white. *Young* with top of head grayish, the wing-coverts and tertials edged with light fulvous. Length 3.85–4.40, wing about 2.60, culmen .50–.60. *Eggs* .61 × .50. *Hab.* South Atlantic and Gulf States, north, regularly, to lower Maryland and Virginia (lower Potomac, shores of Chesapeake Bay, etc.), casually to Ohio, Michigan, Missouri, etc.

729. **S. pusilla** LATH. **Brown-headed Nuthatch.**

*b*². Top of head grayish drab, or olive-gray; white on nape concealed, or obsolete; basal half, or more, of middle tail-feathers white. *Young* not obviously different from adults, but wing-coverts usually more or less distinctly edged with pale buffy. Length 3.80–4.55, wing about 2.60, culmen .60–.65. *Eggs* .60 × .46. *Hab.* Western United States, north to northern border, east to, and including, Rocky Mountains, south to mountainous districts of Mexico.

(93.) 730. **S. pygmæa** VIG. **Pygmy Nuthatch.**

GENUS **PARUS** LINNÆUS. (Page 558, pl. CXXII., figs. 1, 3.)

Species.

COMMON CHARACTERS.—Above plain grayish or brownish (back sometimes dark rusty or chestnut), the top of head and hind-neck usually different in color from rest of upper surface (usually black); sides of head usually whitish; chin and throat often black or brown; rest of lower parts usually whitish medially, the sides and flanks buffy, rusty, grayish, or even chestnut. *Nest* in holes of trees or stumps, composed of soft felted materials, feathers, etc. *Eggs* 5–8, pure white, usually speckled with reddish brown.

*a*¹. Head conspicuously crested. (Subgenus *Lophophanes* KAUP.)

*b*¹. Throat white, or pale grayish; wing 2.75, or more.

*c*¹. Forehead or crest black (except sometimes in young); flanks tinged with rusty.

*d*¹. Forehead sooty black (indistinctly so in young); crest gray, like back; beneath, including lores, dull white, the sides and flanks strongly washed with rusty. *In winter*, the upper parts, especially back, tinged with olive, and white of lower parts tinged with brownish, especially across breast. *Young* similar to adult, but gray of upper parts more brownish, black of forehead indistinct, or replaced by dull sooty brownish, and rusty of sides less distinct.

*e*¹. Darker, with forehead black or dark sooty in adult; length 5.65–6.50, wing 3.05–3.45 (3.24), tail 2.80–3.15 (2.96), exposed culmen .37–.45 (.41), tarsus .80–.85 (.83). *Eggs* .71 × .55. *Hab.* Eastern United States (chiefly south of 40°, but occasionally to 42°), west to edge of Great Plains, south to Gulf coast (including Florida and eastern and central Texas).. 731. **P. bicolor** (Linn.). **Tufted Titmouse.**

e^2. Paler, with forehead chestnut, light rusty brown, or smoky brown. *Hab.* Southeastern Texas (Bee and Bexar Counties). 731*a*. **B. bicolor texensis** Sennett. **Texan Tufted Titmouse.**[1]

d^2. Forehead white or brownish (except along middle line); crest black, or dark brown (dull blackish or dusky brownish, tinged with gray, in young); length about 5.00–6.00.

e^1. Smaller, with forehead white or pale smoky brown, crest and entire crown deep black in adult; gray of upper parts more tinged with olive; wing 2.70–3.05, tail 2.50–2.90. *Eggs* .74 × .53. *Hab.* Eastern Mexico, north to south-central Texas. 732. **P. atricristatus** Cass. **Black-crested Titmouse.**

e^2. Larger, with crest duller black, usually more or less mixed with gray and passing into uniform gray anteriorly, the forehead usually strongly tinged with rusty brown (sometimes almost chestnut); wing 2.95–3.12, tail 2.95–3.00. *Hab.* Southeastern Texas (Bee and Bexar Counties)...... —. **P. atricristatus castaneifrons** Sennett. **Chestnut-fronted Titmouse.**[2]

b^2. Top of head entirely gray or grayish brown; flanks grayish or olive-grayish, without rusty tinge.

d^1. Lower parts whitish (the belly quite white), in marked contrast with color of upper parts.

e^1. Above brownish; bill horn-grayish or plumbeous; length about 5.00–5.60, wing 2.68–2.90 (2.77), tail 2.20–2.60 (2.40), culmen .38–.40 (.40), tarsus .80–.88 (.83). *Eggs* .68 × .52, plain white. *Hab.* Pacific coast of United States from southern California to Oregon. 733. **P. inornatus** Gamb. **Plain Titmouse.**

e^2. Above ash-gray; bill black; length about 5.25–5.75, wing 2.80, tail 2.40–2.55, culmen .38–.45, tarsus .75–.80. *Hab.* Southern portion of Lower California. 733*b*. **P. inornatus cineraceus** Ridgw. **Ashy Titmouse.**

d^2. Lower parts light grayish, not strongly contrasted with brownish gray of upper parts; length about 5.75–6.10, wing 2.80–

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[1] *Parus bicolor texensis* Sennett, Auk, iv. Jan. 1887, 29. (See foot-note under *P. atricristatus castaneifrons*.)

[2] *Parus atricristatus castaneifrons* Sennett, Auk, iv. Jan. 1887, 28.

Having examined four specimens of this form, including the types, I am not satisfied as to its validity as a permanent form or subspecies. There is lacking that definite geographical area so essential to the existence of a geographical race in a non-migratory species; and, its peculiarities being much the same as those characterizing the *P. bicolor texensis* of the same district, the probability of hybridism between *P. bicolor* and *P. atricristatus* is very strongly suggested. In fact, no two specimens of either form are alike, in the series now before me, with which it is almost possible to make a series connecting the two species.

3.00 (2.92), tail 2.40–2.70 (2.58), culmen .40–.48 (.45), tarsus .80–.90 (.83). *Hab.* Rocky Mountain district of United States, west to eastern Oregon, western Nevada, and Arizona.

733*a*. **P. inornatus griseus** Ridgw. **Gray Titmouse.**

*b*². Throat black in adult, dull grayish in young.

Adult: Top of head, including crest, black, the crown gray; a streak behind eye, connecting posteriorly with a vertical bar or crescent behind ear-coverts, collar round hind-neck, and patch covering chin and throat, black; rest of head grayish white; upper parts plain grayish, lower parts white medially, grayish laterally. *Young* with chin blackish, but throat dull grayish, and other markings of head less sharply defined. Length 4.50–5.00, wing 2.60–2.80, tail 2.40–2.65. *Eggs* 5–7, about .66 × .52, plain white. *Hab.* Highlands of Mexico, north to western Texas, southern New Mexico, and southern Arizona.

734. **P. wollweberi** (Bonap.). **Bridled Titmouse.**

*a*². Head without crest. (Subgenus *Parus.*)

*b*¹. Top of head and throat black.

*c*¹. A white superciliary stripe; bill very slender.

Above gray, the wings without distinct lighter edgings; beneath grayish white medially, brownish gray laterally; length 5.00–5.75, wing 2.70–3.00, tail 2.40–2.60. *Eggs* .63 × .48, usually (?) plain white, sometimes slightly spotted with reddish brown. *Hab.* Mountains of western United States.

738. **P. gambeli** Ridgw. **Mountain Chickadee.**

*c*². No white superciliary streak.

*d*¹. Sides and flanks brownish gray, not very different in color from back.

Sides of head and median lower parts white; wings without distinct whitish edgings; length 4.70–5.20, wing 2.60–2.80 (2.64), tail 2.25–2.40 (2.32), tarsus .68–.72 (.70). *Hab.* Highlands of Mexico, north to southern Arizona.

737. **P. meridionalis** Scl. **Mexican Chickadee.**

*d*². Sides and flanks whitish buffy, or light brownish, always very different in color from back.

*e*¹. Wing .20, or more, longer than tail; tertials and greater wing-coverts without distinct whitish edgings; black of throat with an abruptly defined posterior border.

Above uniform grayish; beneath white medially, light buffy brownish laterally (paler in summer); length 4.25–4.60, wing 2.40–2.60 (2.47), tail 2.10–2.50 (2.19), tarsus .55–.65 (.61). *Eggs* .57 × .45. *Hab.* Eastern United States, chiefly south of 40°, west to Missouri, Indian Territory, and eastern Texas.

736. **P. carolinensis** Aud. **Carolina Chickadee.**

*e*². Wing less than .20 longer than tail—usually shorter than tail; tertials and greater wing-coverts with distinct whitish edgings; black of throat more or less broken posteriorly by whitish tips to the feathers.

*f*¹. Wing and tail about equal in length (the latter sometimes a little shorter); colors darker, without white terminal margins to tail-feathers.

*g*¹. Larger, and lighter colored; back olive-grayish, sometimes tinged with pale buffy; sides light buffy (nearly white in summer); length 4.70–5.75, wing 2.55–2.75 (2.63), tail 2.50–2.70 (2.63), tarsus .65–.70 (.69). *Eggs* .60 × .47. *Hab.* Eastern North America, chiefly north of 40°, west to edge of Great Plains.

735. **P. atricapillus** Linn. **Chickadee.**

*g*². Smaller and darker colored; back dark grayish; sides and flanks deep fulvous, or light buffy brownish, in marked contrast with white of breast and belly; length 4.50–5.25, wing 2.35–2.60 (2.45), tail 2.30–2.55 (2.44), tarsus .68–.72 (.70). *Hab.* Northwestern coast district of United States (northern California, Oregon, and Washington Territory; also British Columbia and southern Alaska?).

735*b.* **P. atricapillus occidentalis** (Baird). **Oregon Chickadee.**

*f*². Tail decidedly longer than wing; colors paler, the tail-feathers usually with distinct white terminal margins, the tertials and greater wing-coverts very broadly edged with white.

Above pure ash-gray; sides and flanks pale buffy, sometimes nearly pure white; length about 4.75–6.00, wing 2.55–2.80 (2.72), tail 2.55–3.00 (2.83), tarsus .65–.75 (.70). *Eggs* .61 × .47. *Hab.* Rocky Mountain district, from New Mexico to Alaska (Yukon Valley, Kadiak, etc.), west to edge of Great Basin, east nearly across Great Plains.

735*a.* **P. atricapillus septentrionalis** (Harris). **Long-tailed Chickadee.**

*b*². Top of head brownish; chin and throat brownish or dusky.

*c*¹. Back hair-brown or grayish brown.

*d*¹. Whole side of neck, ear-coverts, etc., pure white; tertials distinctly edged with whitish; sides and flanks light buffy.

Top of head light hair-brown or soft light grayish brown; chin and throat deep brownish slate; length about 5.20–5.60, wing 2.60–2.80 (2.72), tail 2.70–2.80 (2.76), tarsus .62–

.68 (.65). *Eggs* .65 × .50. *Hab.* Western and northern Alaska (St. Michael's to Fort Anderson).

739. **P. cinctus alascensis** (Praz.). **Alaskan Chickadee.**

d^2. Sides of neck ash-gray; ear-coverts paler grayish, fading to white on cheeks; tertials without distinct whitish edges; sides dull rusty.

Top of head hair-brown; throat sooty blackish; length about 5.00–5.75, wing 2.35–2.70 (2.52), tail 2.30–2.80 (2.55), tarsus .62–.70 (.68). *Eggs* .58 × .50. *Hab.* Northern North America east of Rocky Mountains, south to northern portions of Michigan, New York, New England, etc., north to Davis' Straits and Alaska.

(95.) 740. **P. hudsonicus** Forst. **Hudsonian Chickadee.**

c^2. Back deep rusty chestnut. (Top of head deep sepia-brown; throat darker, more sooty; sides of head and neck pure white.)

d^1. Sides and flanks bright rusty, or rusty chestnut, like back; length about 4.50–5.00, wing 2.35–2.60 (2.47), tail 2.00–2.30 (2.10), tarsus .60–.70 (.68). *Hab.* Coast district of Oregon, Washington, British Columbia, and southern Alaska.

741. **P. rufescens** Towns. **Chestnut-backed Chickadee.**

d^2. Sides and flanks light grayish, very slightly or not at all tinged with rusty; wing 2.30–2.60 (2.41), tail 2.00–2.20 (2.10), tarsus .60–.70 (.65). *Eggs* .59 × .46. *Hab.* Coast of California.

741*a*. **P. rufescens neglectus** Ridgw. **Californian Chickadee.**

Genus **PSALTRIPARUS** Bonaparte. (Page 558, pl. CXXII., fig. 5.)

Species.

Common Characters.—Above plain grayish or brownish (or both), the crown different in color from back (except in *P. plumbeus*); beneath plain light grayish, grayish white, or brownish white. *Nest* very bulky, purse-shaped, with the entrance a small circular opening usually on one side near top, composed of mosses, plant-fibres, lichens, and other soft materials, lined with soft feathers; suspended from low bushes. *Eggs* 5–9, pure white, without markings.

a^1. Back gray.

b^1. Top of head light brownish, sides of head much paler.

c^1. Back, etc., brownish gray.

d^1. Darker, the back deep brownish gray, or grayish brown, the top of head sooty brown, lower parts light smoky brown, deeper along sides; length about 4.00–4.50, wing 1.95, tail 2.20, tarsus .65 (only one specimen examined). *Hab.* Northwest coast, from northern California (?) to Washington.

743. **P. minimus** (Towns.). **Bush-Tit.**

d^2. Lighter colored, the back pale brownish gray, top of head rather light smoky brown, lower parts pale smoky grayish; length about 4.00–4.50, wing 1.85–2.10 (1.94), tail 2.00–2.30 (2.18), tarsus .60–.67 (.63). *Eggs* .55 × .40. *Hab.* California, except northern coast district.

743*a*. **P. minimus californicus** Ridgw. **Californian Bush-Tit.**

c^2. Back, etc., bluish ash-gray.

d^1. Top of head light smoky brownish, sides of head paler, etc., as in *P. minimus californicus;* wing 1.85–2.00 (1.92), tail 2.10–2.30 (2.18), tarsus .60. *Hab.* Southern portion of Lower California.

743*b*. **P. minimus grindæ** (Belding). **Grinda's Bush-Tit.**

d^2. Top of head bluish gray, and sides of head light smoky brown, not conspicuously contrasted with gray of crown, etc.; length about 4.12–4.60, wing 2.00–2.15 (2.08), tail 2.35–2.50 (2.43), tarsus .62–.70 (.66). *Hab.* Rocky Mountain district (chiefly within Great Basin), from western Colorado and Wyoming Territory to eastern Oregon and western Nevada, south to New Mexico and Arizona.

(96.) 744. **P. plumbeus** Baird. **Lead-colored Bush-Tit.**

a^1. Back light brown or grayish brown.

Adult male: Side of head glossy black; top of head ash-gray. *Adult female:* Similar to male, but without black patch on side of head, the black being replaced by light grayish brown (paler on malar region and lores), except a streak along each side of occiput. Length about 4.00, wing 1.90–2.00 (1.92), tail 2.10–2.20 (2.15), tarsus .62–.65 (.63). *Hab.* Highlands of Guatemala and southern Mexico.

(97.) **P. melanotis** (Hartl.). **Black-eared Bush-Tit.**

Genus AURIPARUS Baird. (Page 558, pl. CXXII., fig. 2.)

Species.

Adult male: Head, neck, and chest bright yellow, tinged with olive on crown, the forehead sometimes tinged with orange; lesser wing-coverts rich chestnut-red; rest of upper parts plain grayish, lower parts (except chin and throat) grayish white or pale grayish. *Adult female:* Similar to male, but usually somewhat duller in colors, the yellow confined to head alone. *Young:* Top of head and lesser wing-coverts brownish gray, like rest of upper parts; chin and throat dull grayish white, like other lower parts. Length 4.00–4.60, wing 1.90–2.12, tail 1.75–2.05. *Nest* a very bulky globular, flask-shaped, or retort-shaped structure, composed of sticks, thorny twigs, coarse grass-stems, etc., lined with soft feathers, down, etc.; the entrance a small circular opening in one end or side; placed in thorny bushes, six feet or less from ground. *Eggs* 3–6, .60 × .44, bluish or greenish white or pale greenish blue, speckled, chiefly round larger end, with reddish brown. *Hab.* Arid regions of northern Mexico and contiguous portions of United States, from southern Texas to Arizona and Lower California......... 746. **A. flaviceps** (Sund.). **Verdin.**

GENUS **CHAMÆA** GAMBEL. (Page 558, pl. CXXII., fig. 4.)

Species.

Adult: Above plain brownish, the tail showing faint narrow darker bars (nearly or quite obsolete in some specimens); beneath pale cinnamon, or buffy, middle of belly somewhat paler, throat and chest usually faintly streaked with darker; length about 6.00–6.50. (Sexes alike, and young not materially different from adult.) *Nest* in low bushes, composed of small twigs and straw, mixed with feathers, open at top. *Eggs* 3–5, .71 × .57, plain pale greenish blue.

*a*¹. Darker: Above deep umber-brown, the sides of head and neck dark grayish; beneath light cinnamon; wing 2.20–2.60 (2.37), tail 3.20–3.70 (3.41), culmen .40–.45 (.42), tarsus 1.00–1.05 (1.01). *Hab.* Coast of California.

742. **C. fasciata** GAMB. **Wren-Tit.**

*a*². Paler: Above brownish gray, or grayish brown, the sides of head and neck decidedly ashy; beneath pale vinaceous-buff, nearly white on belly; wing 2.20–2.50 (2.37), tail 3.20–3.70 (3.42), culmen .40–.45 (.41), tarsus .95–1.05 (1.00). *Hab.* Interior of California.

742*a*. **C. fasciata henshawi** RIDGW. **Pallid Wren-Tit.**

FAMILY **SYLVIIDÆ**.—THE WARBLERS, KINGLETS, AND GNAT-CATCHERS. (Page 322.)

Genera.

*a*¹ Wing longer than the nearly even or emarginate tail; anterior tarsal envelope continuous or undivided for the greater part of its extent; no white on tail.

- *b*¹. Nostrils exposed; inner side of tarsus with distinct scutellæ. (Subfamily *Sylviinæ*.).. **Phyllopseustes.** (Page 566.)
- *b*². Nostrils concealed by small feathers; inner side of tarsus without distinct scutellæ. (Subfamily *Regulinæ*.)...................... **Regulus.** (Page 323.)

*a*². Wing not longer than the graduated tail; anterior tarsal envelope distinctly scutellate; outer tail-feathers with conspicuous white tips and edgings (sometimes almost entirely white). (Subfamily *Polioptilinæ*.)

Polioptila. (Page 322.)

GENUS **PHYLLOPSEUSTES** MEYER. (Page 566, pl. CXXIV., fig. 1.)

Species.

Adult: Above plain olive-green; a conspicuous superciliary stripe of grayish white (in summer) or light greenish yellow (in winter); lower parts plain whitish, tinged with olive-grayish on sides, and more or less tinged with light greenish yel-

low, especially in winter. *Young:* Similar to adult, but wing-coverts tipped with dull light greenish yellow, and lower parts more decidedly tinged with yellow. Length about 4.75–5.50, wing 2.40–2.70, tail 1.80–2.00, exposed culmen .35–.40, tarsus .70–.80. *Hab.* Northeastern Asia, and western Alaska, north of the peninsula.
747. **P. borealis** (Blas.). **Kennicott's Willow Warbler.**

Genus REGULUS Cuvier. (Page 566, pl. CXXIV., figs. 3, 4.)

Species.

Common Characters.—Above plain olive-green or olive-grayish, brighter on rump and edges of quills and tail-feathers, duller (sometimes grayish) anteriorly; middle and greater wing-coverts tipped with whitish, producing two narrow bands, and tertials edged, more or less, with same; secondaries with a broad basal bar of whitish; lower parts dull whitish, tinged, more or less, with olive or dull yellowish; crown usually orange, yellow, or red centrally. *Young* without black markings or bright colors on head, but otherwise like adults. *Nest* very bulky, usually more or less pensile (but variable in this respect), attached to small twigs in lower portion of spruce or other coniferous trees, composed of delicate plant-fibres, mosses, and various felted materials, and lined with soft feathers. *Eggs* 5–10, whitish or buffy, minutely freckled with brown (sometimes apparently immaculate).

*a*¹. Nostril hidden by a single plume-like feather; adult with a black stripe on each side of crown. (Subgenus *Regulus.*)

*b*¹. Forehead whitish, dull buffy, or light brownish; crown-patch in male rich orange, bordered with yellow, wholly yellow in female. (*Adult males:* Forehead soiled white, sometimes more brownish, the superciliary stripe similar; a dusky streak in front of eye, but this not reaching to bill; a dusky streak behind eye; top of head black anteriorly and laterally, this black with an internal border of yellow, enclosing a concealed patch of rich cadmium-orange; sides of neck and hind-neck grayish. *Adult females:* Similar, but orange patch in centre of crown entirely replaced by yellow. *Young:* Black head-markings obsolete, or very faintly indicated, and bright crown-patch of adult wanting; otherwise much like adult. Length 3.15–4.55, wing 2.10–2.25, tail 1.60–2.00, exposed culmen .25–.30, tarsus .70. *Nest* a ball-like mass of green moss, 4.00, or more, in diameter, attached to extremity of branch of pine or fir tree; lined with hair and soft feathers. *Eggs* 5–10, dull or buffy white, finely and very faintly speckled or minutely freckled, chiefly round larger end, with deeper buffy.)

*c*¹. Colors duller and grayer. *Eggs* .52 × .41. *Hab.* Eastern and northern North America, west to Rocky Mountains, breeding from extreme northern and elevated portions of United States northward; wintering nearly throughout eastern United States, and south to Guatemala................ 748. **R. satrapa** Licht. **Golden-crowned Kinglet.**

c^2. Colors brighter, the upper parts more decidedly olivaceous, the lower parts with a strong brownish buffy tinge, yellow and orange of head more intense, etc. *Eggs* .56 × .40. *Hab.* Pacific coast, from California to Sitka...................... 748*a*. **R. satrapa olivaceus** Baird.

(98.) **Western Golden-crowned Kinglet.**

b^2. Forehead and broad stripe across lores and behind eye black; crown-patch in male entirely vermilion-red.

Otherwise much like *R. satrapa.* "Length 4½ inches, extent of wings 6; bill along ridge nearly ⅓, along the gape nearly ½; tarsus ¾." *Hab.* "Fatland Ford, on the Schuylkill river," Pennsylvania. (Only one specimen known to have been obtained, this by Audubon, on June 8, 1812.).................. —. **R. cuvieri** Aud. **Cuvier's Kinglet.**

a^2. Nostrils hidden by a tuft of small bristle-like feathers; adult without any black on head. (Subgenus *Corthylio* Cabanis.[1])

b^1. Above grayish olive, the head not darker than back; *adult male* with crown-patch bright minium-red, or scarlet-vermilion; length 3.75–4.60, wing 2.20–2.30, tail 1.85–1.90, bill from nostril .20–.22, tarsus .75. *Nest* semi-pensile, very bulky (about 4.00 × 3.00–4.00 outside), composed of fine strips or shreds of soft bark, feathers, etc., and green moss, lined with hair and feathers; cavity about 3.00 deep by 2.00 across; attached to extremity of branch of pine or spruce tree 10–20 feet, or more, from ground. *Eggs* .55 × .43, dull whitish or pale buffy, faintly speckled or spotted, chiefly round larger end, with light brown (sometimes nearly plain). *Hab.* Whole of North America, breeding from extreme northern border and higher mountains of United States northward; wintering in more southern United States and south to Guatemala.

749. **R. calendula** (Linn.). **Ruby-crowned Kinglet.**

b^2. Above sooty olive, the head usually appreciably darker than back; *adult male* with crown-patch pinkish or purplish vermilion-red; wing 2.00–2.20, tail 1.70–1.95, bill from nostril .22–.25, tarsus .80. *Hab.* Guadalupe Island, Lower California.

750. **R. obscurus** Ridgw. **Dusky Kinglet.**

GENUS **POLIOPTILA** SCLATER. (Page 566, pl. CXXIV., fig. 2.)

Species.

Common Characters.—*Adult males:* Above plain bluish gray, the top of the head sometimes glossy black; wings dusky, with bluish gray edgings (the tertials sometimes broadly edged with white); tail black, the exterior feathers partly (sometimes almost wholly) white; lower parts white or grayish. *Adult females* similar to males, but without any black on head, and with the gray of a less bluish tint. *Young* similar to adult females, but colors much duller, the gray of a duller, more brownish hue. *Nest* built in trees, usually saddled upon horizontal branch, deeply cup-shaped, very compact, composed of plant-fibres and other felted materials, lined with soft feathers, and often beautifully decorated exteriorly with variously colored lichens. *Eggs* 3–5, greenish or bluish white, speckled with brown.

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[1] *Corthylio* Cab., Jour. für Orn. 1853, 83. Type, *Motacilla calendula* Linn.

a^1. Exposed portion of outer tail-feather entirely white.

b^1. Top of head in adult males plumbeous-blue, bordered anteriorly and laterally by a black line; in female, bluish ash-gray, not markedly different from lighter gray of sides of head.

c^1. Lower parts white medially, pale ash-gray laterally; upper parts clear grayish blue or plumbeous, deeper on top of head, decidedly paler on rump; length 4.05–5.50, wing 2.00–2.20 (2.07), tail 2.05–2.20 (2.15). *Nest* always (?) beautifully decorated with lichens. *Eggs* .56 × .43. *Hab.* United States, chiefly south of 42°, wintering in Gulf States, western Cuba, Bahamas (occasionally), Mexico, and
(99.) Guatemala........ 751. **P. cærulea** (Linn.). **Blue-gray Gnatcatcher.**

c^2. Lower parts light bluish gray, deeper laterally; upper parts deep bluish plumbeous, somewhat bluer on top of head, but scarcely, if at all, paler on rump; about the size of *P. cærulea.* *Hab.* Bahamas (Abaco and New Providence; resident); Cozumel?
P. cærulea cæsiogaster Ridgw. **Bahaman Gnatcatcher.**[1]

b^2. Top of head in adult males glossy black; in females and young dark bluish gray or plumbeous, abruptly contrasted with whitish of sides of head (the latter sometimes including a distinct superciliary streak).

c^1. Tertials broadly and conspicuously edged with pure white.

d^1. Lores partly (sometimes entirely) white; occiput (in adult male), as well as crown and forehead, glossy black; length about 4.00–4.25, wing 1.90–2.00, tail 1.90–2.10. *Hab.* Southern Mexico (Tehuantepec, etc.), Guatemala, Salvador, and Nicaragua.
P. albiloris Scl. & Salv. **White-lored Gnatcatcher.**[2]

d^2. Lores entirely black in adult males, dull grayish in females and young.

e^1. Otherwise like *P. albiloris;* length about 4.25–4.50, wing 1.85–2.10, tail 2.00–2.20. *Hab.* Brazil (Bahia, etc.) to Nicaragua.
P. leucogastra (Max.). **Maximilian's Gnatcatcher.**[3]

e^2. Smaller, and with occiput light bluish gray, like hind-neck, back, etc.; length 3.75, wing 1.85, tail 1.75. *Hab.* Yucatan.
P. albiventris Lawr. **Lawrence's Gnatcatcher.**[4]

c^2. Tertials inconspicuously edged with dull grayish white or light grayish.

d^1. Lores, superciliary region, and upper half of ear-coverts glossy black in adult male, ash-gray in female and young; length about 4.10–4.50, wing 1.85–1.95, tail 2.10–2.25. *Hab.* Western Mexico (Mazatlan to Tehuantepec).

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[1] New subspecies; seventeen specimens examined.

[2] *Polioptila albiloris* Scl. & Salv., P. Z. S. 1860, 298.

[3] *Sylvia leucogastra* Max., Beitr. iii. 1831, 710. *Polioptila leucogastra* Scl., Cat. Am. B. 1862, 12.

[4] *Polioptila albiventris* Lawr., Ann. N. Y. Ac. Sci. iii. No. 9, 1885, 273.

P. nigriceps BAIRD. **Baird's Gnatcatcher.**[1]

*d*². Lores, superciliary region, and greater portion of ear-coverts white, in abrupt contrast with black or gray of top of head; a distinct black or gray streak behind eye, along upper edge of ear-coverts; length about 4.00–4.50, wing 1.80–1.90, tail 1.70–1.85. *Hab.* Guatemala to Peru and Venezuela.

P. bilineata (BP.). **White-browed Gnatcatcher.**[2]

*a*². Exposed portion of inner web of outer tail-feather with at least the basal half black.

*b*¹. Adult males with top of head glossy black.

*c*¹. Outer tail-feather with outer web entirely white, the inner web broadly tipped with white.

Adult male: Above light bluish gray (as in *P. cærulea*), the whole top of head, down to lores and auriculars, uniform glossy black; eyelids white; lower parts white, shaded with bluish gray on sides. *Adult female:* Top of head wholly gray, the plumage otherwise as in male, but usually somewhat duller. *Young:* Similar to adult female, but somewhat washed with brownish—the young male attaining the black by degrees, commencing with a streak over each eye. Length about 4.25–4.60, wing 1.90–2.00, tail 2.15–2.25. *Eggs* .54 × .42. *Hab.* Southwestern border of United States, from southern Texas to lower Colorado Valley, and thence south to Cape St. Lucas; northern Mexico.

752. **P. plumbea** BAIRD. **Plumbeous Gnatcatcher.**

*c*². Outer tail-feather with outer web black, edged with white, the inner web narrowly tipped with white.

Adult male: Top of head black, as in *P. plumbea*, rest of upper parts dark bluish gray or slate-gray; eyelids white; lower parts dull light gray, deeper laterally, tinged with brownish posteriorly. *Adult female:* Similar to male, but with black on head wholly replaced by the general dark gray color, the latter duller than in male. *Young:* Similar to adult female, but more tinged with brownish—the young male with black of head appearing gradually, as in *P. plumbea.* Length about 4.15–4.50, wing 1.90–2.00, tail 2.15–2.25. *Hab.* Pacific coast of southern California and northern Lower California.

753. **P. californica** BREWST. **Black-tailed Gnatcatcher.**

*b*². Adult male with top of head ash-gray, like back.

Adult male with a curved black line bordering upper and hinder margin of ear-coverts. *Adult female* similar, but duller in general color, with the black line bordering ear-coverts indistinct or obsolete; length about 4.20, wing 1.55, tail 1.90–2.00. *Hab.* Cuba.

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[1] *Polioptila nigriceps* BAIRD, Review Am. B. i. 1864, 69.

[2] *Culicivora bilineata* BP., Consp. i. 1850, 316. *Polioptila bilineata* SCL., P. Z. S. 1855, 12.

P. lembeyi Gundl. **Cuban Gnatcatcher.**[1]

Family TURDIDÆ.—The Thrushes, Solitaires, Stonechats, Bluebirds, etc. (Page 323.)

Genera.

a^1. Gonys not more than one-third as long as commissure, the bill short and rather depressed. (Subfamily *Myadestinæ.*—The Solitaires.) **Myadestes.** (Page 572.)

a^2. Gonys more than one-third as long as commissure, the bill more slender and compressed. (Subfamily *Turdinæ.*—The Thrushes.)

- b^1. Wing less than five times as long as tarsus; wings and tail without any blue.
  - c^1. First quill not reaching beyond tips of primary coverts; tail without clear rufous at base.
    - d^1. Tail without white at base.
      - e^1. Tarsus decidedly longer than middle toe, with claw; nasal fossæ partly naked, the nostrils wholly exposed.
        - f^1. Tail less than three times as long as tarsus; lower parts more or less spotted in adult.... **Turdus.** (Page 573.)
        - f^2. Tail more than three times as long as tarsus, the lower parts plain (throat streaked) in adult. **Merula.** (Page 577.)
      - e^2. Tarsus not longer than middle toe, with claw; nasal fossæ entirely filled with feathers, partly concealing the nostrils. **Hesperocichla.** (Page 578.)
    - d^2. Tail with basal portion white; plumage entirely without spots in adult.. **Saxicola.** (Page 579.)
  - c^2. First quill reaching beyond tips of primary coverts.
    - d^1. Feathers on top of head rather short, not forming an obvious crest when erected; outer web of outer tail-feather widening toward end; tail bicolored, the basal portion (except on middle feathers) abruptly clear rufous; sexes very different in color, the adult male with blue throat...... **Cyanecula.** (Page 579.)
    - d^2. Feathers on top of head lengthened, forming a decided bushy crest when erected; outer web of outer tail-feather not widened toward end; sexes alike, and throat never blue........ *Catharus.*[2]
- b^2. Wing more than five times as long as tarsus.

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[1] *Polioptila lembeyi* Gundl., Journ. für Orn. 1861, 32.

[2] *Catharus* Bonap., Consp. i. 1850, 278. Type, *C. immaculatus* Bp., = *Turdus aurantiirostris* Hartl. (Represented by four species in Mexico and Guatemala, and others farther southward.)

c^1. Gonys longer than two-fifths the commissure; plumage plain above (except in young), with prevailing color bright blue; no white spots on quills; wing less than 4.50 .... **Sialia.** (Page 580.)

c^2. Gonys less than two-fifths the commissure; plumage much varied above, the prevailing color bistre brown, more or less streaked with dull whitish, the wings and tail mainly black; quills with white patch at base; wing 5.00, or more............................ *Ridgwayia.*[1]

GENUS **MYADESTES** SWAINSON. (Page 571, pl. CXXIV., fig. 7.)

Species.

COMMON CHARACTERS (of North American species).—*Adults:* Above uniform brownish or grayish, beneath plain grayish; a distinct whitish orbital ring; quills and secondaries with a lighter (pale grayish or buffy) band near base, conspicuous on spread wing. *Young:* Conspicuously spotted, above and below, with buffy. *Nest* built among rocks, banks of streams, on old logs or stumps, or similar places, rather bulky, loosely constructed of sticks, etc., lined with finer materials. *Eggs* 3–6, whitish, speckled with reddish brown.

a^1. Second quill equal to sixth, the primaries exceeding secondaries by about the same distance that the latter exceed the greater coverts.

Adult: Uniform brownish gray, paler beneath, especially on chin and throat, anal region, and lower tail-coverts; wings and tail dusky, the bases of the quills and secondaries buffy or ochraceous (mostly concealed in closed wing), the secondaries edged with pale grayish, the greater coverts and tertials tipped with whitish (this obsolete in worn summer dress); tail-feathers with outer web and terminal portion of inner web grayish white. *Young:* Wings and tail as in adult; rest of plumage, including wing-coverts, conspicuously spotted with buff. Length 7.80–9.50, wing 4.35–4.85, tail 4.15–4.70. *Eggs* .91 × .69. *Hab.* Western United States (in mountains), north to British Columbia, east to and including Rocky Mountains (casually to Illinois).

754. **M. townsendii** (AUD.). **Townsend's Solitaire.**

a^2. Second quill not longer than seventh, the longest primaries exceeding the secondaries by much less than distance between tips of latter and longer greater coverts.

b^1. Lower parts conspicuously different in color from the upper; a distinct dusky streak on each side of throat. (Head, neck, and breast gray, darker above; other upper parts rusty olive, the wings more rusty; secondaries with a dusky bar across basal portion; sides of forehead, malar stripe, throat, and belly whitish.)

c^1. Head and breast dark gray, the throat not conspicuously paler; wing

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[1] *Ridgwayia* STEJNEGER, Proc. U. S. Nat. Mus. v. Feb. 13, 1883, 460. Type, *Turdus pinicola* SCL. (*Hab.* Mountains of eastern Mexico.)

4.00–4.10, tail about 4.00, exposed culmen .45–.50, tarsus .80–.85. *Hab.* Highlands of Guatemala and eastern Mexico.

M. obscurus LAFR. **Mexican Solitaire.**[1]

c^2. Head and breast ash-gray, this color invading the back; throat and forehead distinctly whitish.

d^1. Middle tail-feathers without trace of whitish tips; wing 4.15–4.35, tail 4.30, exposed culmen .45–.47, tarsus .80–.82. *Hab.* Central and western Mexico, north to Mazatlan.

M. obscurus occidentalis STEJN. **Mazatlan Solitaire.**[2]

d^2. Six middle tail-feathers minutely tipped with white; wing 3.90–4.05, tail 3.90–4.20, exposed culmen .45, tarsus .90. *Hab.* Tres Marias Islands, western Mexico.

M. obscurus insularis STEJN. **Tres Marias Solitaire.**[3]

b^2. Lower parts similar in color to the upper, though slightly paler; no dusky streak on side of throat.

Adult: Uniform slate-color, paler beneath, the lores and a broad bar across basal portion of secondaries black; eyelids white; wing about 3.90–4.00, tail 3.70–3.90, exposed culmen .40, tarsus .80–.85. *Hab.* Highlands of Guatemala and southern Mexico.

M. unicolor SCL. **Slate-colored Solitaire.**[4]

GENUS **TURDUS** LINNÆUS. (Page 571, pl. CXXIII., figs. 1, 4.)

Species.

a^1. Wing never longer than three and a half times the length of the tarsus. *Adults* plain brown above, usually uniform, but sometimes more rufescent on tail and upper tail-coverts; beneath whitish (sometimes buffy anteriorly), the chest, etc., spotted with brown or blackish. *Young* essentially like adults, but with top of head, back, etc., more or less streaked with dull whitish, pale buffy, or pale rusty, the middle and greater wing-coverts tipped with the same, and (except in *T. mustelinus*) spots of lower parts more transverse, and extending backward over flanks, etc. (Subgenus *Hylocichla* BAIRD.)

b^1. Sides distinctly spotted, as well as the breast; exposed culmen .62, or more.

Adult: Above tawny olive, brighter or more cinnamon on top of head, more olive on tail; beneath, including sides, white, the breast and sides marked with roundish or obcordate spots of black or dusky; length 7.50–8.25, wing 4.10–4.50, tail 3.00–3.30, exposed culmen .62–.75, tarsus 1.20–1.30. *Nest* usually saddled upon horizontal branch of a small tree, in damp woods, very compact, composed partly of mud. *Eggs* 2–5, 1.04 × .72, plain greenish blue. *Hab.* Eastern United States, in summer, north to southern Michigan, Ontario, Massachusetts, etc.; south, in winter, to Guatemala and Cuba.

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[1] *Myiadestes obscurus* LAFR., Rev. Zool. 1839, 98.

[2] *Myadestes obscurus* var. *occidentalis* STEJN., Proc. U. S. Nat. Mus. iv. Apr. 6, 1882, 371, 372.

[3] *Myadestes obscurus* var. *insularis* STEJN., Proc. U. S. Nat. Mus. iv. Apr. 6, 1882, 371, 373.

[4] *Myiadestes unicolor* SCL., P. Z. S. 1856, 299.

755. **T. mustelinus** Gmel. **Wood Thrush.**

*b*². Sides grayish or brownish, without distinct spots; chest more or less tinged with buff, and marked with triangular darker spots; exposed culmen not more than .60.

*c*¹. Second quill much longer than fifth, the second or third longest; tail and its upper coverts not noticeably different in color from other upper parts (except sometimes in *T. ustulatus*).

*d*¹. No distinct lighter orbital ring.

*e*¹. Above tawny brownish, the chest buffy or light ochraceous, marked with small wedge-shaped spots or streaks of brown. *Nest* on or near ground, without mud in its composition. *Eggs* plain greenish blue (very rarely with a few small specks of brown).

*f*¹. Above light tawny brown; chest creamy buff, with narrow markings of brown, scarcely darker than upper parts; length 6.45–7.75, wing 3.75–4.15 (3.90), tail 2.70–3.30 (2.96), culmen .52–.60 (.55), tarsus 1.05–1.25 (1.15). *Eggs* .85 × .67. *Hab.* Eastern United States and British Provinces, breeding from about 40° north to Manitoba, Ontario, Anticosti, and Newfoundland.

756. **T. fuscescens** Steph. **Wilson's Thrush.**

*f*². Above russet-olive; chest very pale buff, with broader markings of darker brown; length about 6.90–7.90, wing 3.80–4.25 (4.02), tail 2.95–3.40 (3.20), culmen .55–.60 (.57), tarsus 1.15–1.28 (1.17). *Eggs* .85 × .66. *Hab.* Rocky Mountains, east, casually (?), during migrations, to Minnesota, Illinois, etc .... 756*a*. **T. fuscescens salicicolus** (Ridgw.). **Willow Thrush.**

*e*². Above olive-brown or grayish olive, the sides of the head nearly uniform grayish; chest pale buffy (sometimes nearly white), marked with large triangular spots of dusky. *Nest* in low bushes or on ground, composed of mosses, etc., bulky and compact. *Eggs* greenish blue, spotted with rusty brown.

*f*¹. Length about 7.00–7.75, wing 3.75–4.40 (4.07), tail 2.95–3.40 (3.09), culmen .45–.58 (.55), tarsus 1.12–1.30 (1.18). *Eggs* .92 × .67. *Hab.* Northern North America east of Rocky Mountains, breeding from Labrador and west side of Hudson's Bay north to Arctic coast and coast of Bering's Sea; in winter, Middle America, south to Costa Rica; eastern Siberia.

757. **T. aliciæ** Baird. **Gray-cheeked Thrush.**

*f*². Length about 6.25–7.25, wing 3.40–3.80 (3.65), tail 2.60–2.70 (2.75), culmen .50–.52 (.51), tarsus 1.10–1.25 (1.13). *Eggs* .87 × .63. *Hab.* In summer, higher mountains of northeastern United States (Catskills, White Mountains, etc.), and Nova Scotia; Illinois (autumn); winter quarters unknown....... 757*a*. **T. aliciæ bicknelli** RIDGW. **Bicknell's Thrush.**

*d*². A very distinct orbital ring of buff or whitish. (Above uniform olive, varying from a grayish to a russet tint, the wings, sometimes tail also, slightly browner, or less olive, than back; sides of head with a strong buffy suffusion; chest buffy, marked with triangular spots of brown or dusky. *Nest* in bushes, usually near water, bulky, and compact, and neatly constructed of mosses, shreds of bark, etc. *Eggs* light greenish blue, averaging decidedly paler than in *T. aliciæ*, spotted with rusty brown.)

*e*¹. Above russet-brown, the wings and tail often appreciably browner or more rufescent; chest pale buff, marked with rather small and usually narrow cuneate spots of dark brown; length 6.90–7.60, wing 3.60–4.00 (3.87), tail 2.80–3.30 (3.05), culmen .50–.60 (.54), tarsus 1.10–1.20 (1.13). *Eggs* .93 × .67. *Hab.* Pacific coast, north to Sitka; south, in winter, through western Mexico to Guatemala.

758. **T. ustulatus** NUTT. **Russet-backed Thrush.**

*e*². Above decidedly olivaceous, sometimes even inclining to grayish, the wings and tail concolor with, or at least not very different from, the back; chest yellower buff, marked with large, broad, dusky (sometimes blackish) triangular spots; length 6.35–7.55, wing 3.80–4.10 (3.96), tail 2.80–3.10 (2.95), culmen .50–.55 (.52), tarsus 1.05–1.18 (1.10). *Eggs* .90 × .65. *Hab.* Eastern North America, but west to and including Rocky Mountains (as far as East Humboldt Mountains and the upper Columbia), breeding chiefly north of the United States, wintering from Gulf States and Mississippi Valley south to Cuba, Guatemala, Costa Rica, Panama, and Peru.. 758*a*. **T. ustulatus swainsonii** (CAB.). **Olive-backed Thrush.**

*c*². Second quill shorter than fifth, the fourth longest; tail and its upper coverts rufous, in decided contrast with the color of the back. (Chest, and a distinct orbital ring, buffy, sometimes nearly white, the former marked with large triangular spots of dusky. *Nest* on ground, in damp or swampy woods, composed of dead leaves, dry grasses, etc. *Eggs* plain greenish blue, paler than in *T. mustelinus* and *T. fuscescens*.)

*d*¹. Grayish brown above (more olivaceous in winter); flanks and thighs light grayish; bill slenderer.

*e*¹. Smaller; tail deep rufous, almost chestnut; length 6.00–7.00, wing 3.25–3.80 (3.57), tail 2.60–3.00 (2.76), culmen .45–.52 (.50), tarsus 1.10–1.20 (1.12). *Eggs* .86 × .62. *Hab.* Pacific coast, breeding from mountains of California north to Kadiak; south, in winter, to Lower California and western Mexico, as far as Colima; during migrations, east to Nevada, Arizona, Colorado (Denver), western Texas, etc. 759. **T. aonalaschkæ** Gmel. **Dwarf Thrush.**

*e*². Larger; tail dull ochraceous-rufous, or fulvous; colors in general rather grayer; length 7.50–8.25, wing 3.65–4.35 (4.08), tail 2.95–3.45 (3.27), culmen .53–.60 (.57), tarsus 1.12–1.28 (1.18). *Eggs* .86 × .64. *Hab.* Rocky Mountains, from northern border of United States south to highlands of Mexico and Guatemala.......... 759*a*. **T. aonalaschkæ auduboni** (Baird). **Audubon's Hermit Thrush.**

*d*². Above dull brown, deeper, or more "smoky," in winter; flanks and thighs olive-brownish; bill stouter.

Tail and its upper coverts decidedly rufescent (averaging about intermediate in tint between that of *T. aonalaschkæ* and *T. auduboni*); length 6.50–7.65, wing 3.40–3.90 (3.64), tail 2.55–3.15 (2.88), culmen .50–.60 (.59), tarsus 1.15–1.30 (1.19). *Eggs* .88 × .66. *Hab.* Eastern North America, breeding from northern United States northward, and wintering from about 40° to Gulf coast.
759*b*. **T. aonalaschkæ pallasii** (Cab.). **Hermit Thrush.**

*a*². Wing more than four and a half times as long as tarsus. (Subgenus *Turdus* Linn.)

Adult: Above plain brownish; a superciliary stripe and a malar stripe (widening beneath and behind ear-coverts into somewhat of a patch), white; lower parts white medially, the under wing-coverts, sides, and flanks plain rufous; breast streaked with dusky. *Young:* Upper parts, including wing-coverts, streaked and barred with buffy or whitish; lower parts more extensively spotted or streaked. Length about 8.00–9.00, wing 4.45–4.85, tail 3.00–3.45, culmen .78–.86, tarsus 1.15–1.25. *Nest* usually in bushes or small trees, bulky, composed of mosses, dried grasses, etc. *Eggs* 1.01 × .76. pale dull bluish, pale greenish blue, or pale olive-greenish, freckled with reddish brown. *Hab.* Northern portion of Europe and Asia; accidental in Greenland.
760. **T. iliacus** Linn. **Red-winged Thrush.**

GENUS **MERULA** LEACH. (Page 571, pl. CXXIII., fig. 5.)

Species.

COMMON CHARACTERS (of North American species).—*Adults* (sexes essentially alike, but female usually a little paler and duller in color than male): Above plain grayish, the back, scapulars, and wing-coverts sometimes rusty or olive-brownish, the head sometimes blackish; throat white, streaked with black or grayish; chest, breast, sides, axillars, and under wing-coverts (sometimes belly also), plain rufous or buffy; under tail-coverts, anal region, and hinder flanks (sometimes belly also) white, the first with concealed spots of grayish. *Young:* Above streaked with light fulvous or whitish; beneath whitish, more or less tinged with rusty or buffy, and spotted with blackish or grayish. *Nest* very compact and rather bulky, with more or less of mud in its composition, usually saddled upon a horizontal branch, but often variously situated. *Eggs* 3–5, plain bluish (very rarely speckled with brown).

a^1. Upper parts in adults plain grayish, without rusty.

b^1. Breast, etc., in adults rufous, or reddish ochraceous; exposed culmen usually less than .80, tarsus 1.30, or more. (*Adults:* Head and neck blackish, or at least decidedly darker than back; eyelids, a supraloral streak, and streaks on chin and throat white; wings and tail dusky (sometimes black), the feathers edged with slaty; back, scapulars, and rump uniform slaty, the feather of the first sometimes blackish centrally; bill bright yellow, the upper mandible tipped with black. *In winter*, similar, but with upper parts tinged with brown, rufous feathers of breast, etc., margined with white, and upper mandible chiefly dusky, the lower duller yellow. *Young in first winter:* Head and neck brownish gray, like upper parts, the white of upper eyelid prolonged backward into a more or less extensive postocular streak, and rufous of breast, etc., paler, or more olivaceous.)

c^1. Outer tail-feather with a distinct white spot at tip of inner web; anterior portion of back usually more or less clouded with black (in fully adult birds); length 9.00–10.00, wing 4.90–5.40 (5.28), tail 4.10–4.50 (4.34), culmen .85–.92 (.90), tarsus 1.30–1.40 (1.34). *Eggs* 1.15 × .78. *Hab.* Eastern and northern North America, breeding south to about 35° (farther in Alleghanies); north to Alaska (Yukon district) and Hudson's Bay, west to Great Plains; occasional in eastern Mexico...... 761. **M. migratoria** (LINN.). **American Robin.**

c^2. Outer tail-feather without distinct white tip (often with no white at all); anterior portion of back slaty gray, abruptly defined against black of hind-neck; length 10.00–11.00, wing 5.20–5.70 (5.41), tail 3.80–4.70 (4.24), culmen .85–.95 (.90), tarsus 1.20–1.40 (1.31). *Eggs* 1.17 × .82. *Hab.* Western United States, north to British Columbia, east to, and including, Rocky Mountains, south over table-lands of Mexico.. 761*a*. **M. migratoria propinqua** RIDGW. **Western Robin.**

b^2. Breast, etc., pale buff; exposed culmen usually more than .80, tarsus less than 1.30.

Adult: Above plain brownish gray, including head and neck; a distinct superciliary stripe of white; no white at tips of outer tail-feathers; wing 5.10–5.20, tail 3.90–4.15, culmen .95–1.05, tarsus 1.20–1.25. *Hab.* Lower California (near Cape St. Lucas).

762. **M. confinis** BAIRD. **St. Lucas Robin.**

a^2. Back, scapulars, and wing-coverts more or less brown or rusty, in contrast with grayer shade of hind-neck, rump, and quills. (Whole belly, anal region, and lower tail-coverts white, the latter with the plumbeous spots entirely concealed; no white about eye, and no white on outer tail-feathers.)

b^1. Sides, flanks, etc., ochraceous or ochraceous-rufous; wing-coverts, scapulars, and back bright rusty brown, the hind-neck ash-gray or plumbeous, in marked contrast; wing 4.60–5.20, tail 3.85–4.50, culmen .85–1.00, tarsus 1.25–1.32. *Hab.* Western and southern Mexico, north to Mazatlan.

M. flavirostris SWAINS. **Mazatlan Robin.**[1]

b^2. Sides, flanks, etc., dull grayish fulvous; wing-coverts and scapulars light raw-umber brown, the back more grayish brown; hind-neck scarcely different from back; wing 4.80–4.85, tail 3.90–4.00, culmen 1.02–1.05, tarsus 1.35. *Hab.* Tres Marias Islands, western Mexico.

M. graysoni RIDGW. **Tres Marias Robin.**[2]

GENUS HESPEROCICHLA BAIRD. (Page 571, pl. CXXIII., fig. 3.)

Species.

Adult male: Above dark plumbeous, varied by a broad supra-auricular stripe, two bands across wing (tips of greater and middle coverts), patch at base of primaries, etc., of orange-rufous or ochraceous; chin, throat, breast, and sides orange-rufous or ochraceous; a broad band of dark plumbeous or slaty across chest; posterior lower parts white, tinged more or less with ochraceous, the feathers dark grayish beneath surface. *Adult female:* Much paler and duller than the male, the upper parts and collar across chest grayish brown (more brown in winter). *Young:* Similar to adult female, but collar much less distinct and more or less broken by ochraceous spotting; feathers of throat and breast indistinctly bordered with dusky, and some of the feathers of upper parts with indistinct paler shaft-streaks. Length 9.00–10.00, wing 4.90–5.20, tail about 3.60–3.80, culmen about 1.00, tarsus 1.30. *Nest* compact and bulky, in bushes or small trees. *Eggs* 1.11 × .82, pale greenish blue, sparingly speckled with brown. *Hab.* Western North America, chiefly near Pacific coast, from California (in winter) to Bering's Strait; breeding chiefly north of United States; east, casually, to New Jersey, Long Island, and Massachusetts.................................... 763. **H. nævia** (GMEL.). **Varied Thrush.**

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[1] *Merula flavirostris* SWAINS., Philos. Mag. n. s. i. 1827, 369.

[2] *Merula flavirostris graysoni* RIDGW., Proc. U. S. Nat. Mus. v. June 5, 1882, 12.

GENUS **CYANECULA** BREHM. (Page 571, pl. CXXIV., fig. 2.)

Species.

COMMON CHARACTERS.—Above plain grayish brown, the tail dusky, with basal half (except of middle feathers) abruptly clear rufous; a superciliary stripe of dull white; lower parts, from breast back, dull white, the sides tinged with grayish brown. *Adult males:* Chin, throat, and breast blue, usually enclosing a spot of rufous or white on lower part of throat, the blue bordered posteriorly by a blackish crescentic band, this succeeded by a broader one of rufous. *Adult females* without any blue, the chin, throat, and chest being whitish, bordered laterally and posteriorly by a nearly continuous series of blackish spots; a whitish malar streak. *Young:* Dark sooty above and across chest, with narrow streaks of pale yellowish; lower parts with feathers whitish centrally, but bordered with sooty blackish; under tail-coverts pale buff. *Nest* in cavities in banks of streams, etc., composed of mosses and dried grasses, lined with finer grasses and hair. *Eggs* 3–5, .73 × .55, pale olive, olive-greenish, or brownish, deeper on or round larger end (sometimes uniform).

a^1. Adult male with throat-spot rufous; length about 6.00, wing 3.10–3.15, tail 2.35–2.40, culmen .45–.48, tarsus 1.10–1.15. *Hab.* Northern Europe and Asia; casual (?) in western Alaska (St. Michael's).

764. **C. suecica** (LINN.). **Red-spotted Bluethroat.**

a^2. Adult male with throat-spot (if present) white, but throat, etc., frequently entirely blue; wing 2.90–3.00, tail 2.10–2.30, culmen .45–.50, tarsus 1.00–1.10. *Hab.* Central Europe, east to Russia.

C. wolfii BREHM. **Bluethroat.**[1]

GENUS **SAXICOLA** BECHSTEIN. (Page 571, pl. CXXIV., fig. 5.)

Species.

Adult male: Above plain ash-gray, the wings and terminal third of tail black, the basal two-thirds of the latter (except on middle feathers) white; forehead, superciliary stripe, lower rump, and upper tail-coverts also white; a broad stripe of black on side of head, including lores, orbits, and ear-coverts; lower parts plain light buffy anteriorly, white posteriorly. *Adult female:* Above duller gray, the wings and terminal portion of tail dusky; lores dusky, and auriculars dusky grayish, neither in marked contrast; lower parts dull grayish buff anteriorly, dull white posteriorly. *Winter plumage:* Above plain brown, the lower rump, upper tail-coverts, and basal portion of tail white, as in summer; wing-feathers (blackish in male, grayish dusky in female) conspicuously margined with light cinnamon or brownish buff; lower parts entirely dull rusty buff, deeper on breast and chest; no distinct dusky stripe on side of head. *Young:* Similar to female, but with "obscure transverse terminal dark bars and pale centres to most of the feathers of the upper and under parts." Length about 5.50–6.50, wing 3.75–4.15, tail 2.00–2.55, culmen .47–.52, tarsus .95–1.20. *Nest* built among rocks, stone walls, etc., composed of grasses, etc., lined with feathers. *Eggs* 3–6, .85 × .63, plain pale greenish blue. *Hab.* Northern portion of northern hemisphere, breeding far northward; south, in winter, casually, to Nova Scotia, Maine, Long Island, New York, Canada, and Colorado.. 765. **S. œnanthe** (Linn.). **Wheatear.**

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[1] *Sylvia wolfii* BREHM, Beitr.-Vogelk. ii. 1822, 173. *Cyanecula wolfii* BREHM, Isis, 1828, 1280.

Genus **SIALIA** Swainson. (Page 572, pl. CXXIV., fig. 6.)

Species.

Common Characters.—*Adult males* bright blue above, the back sometimes partly or entirely chestnut; beneath cinnamon anteriorly and white posteriorly, blue with cinnamon-chestnut patch on breast, or blue fading into white posteriorly. *Adult females* much duller, with bright blue confined to wings, rump, upper tail-coverts, and tail, the other upper parts dull grayish or brownish; beneath similar to male, but much paler and duller (dull grayish brown anteriorly in *S. arctica*). *Young:* Grayish, brownish, or dusky above (except wings and tail), the back, scapulars, and wing-coverts marked with drop-shaped spots or streaks of pale buffy or whitish (these sometimes nearly obsolete in *S. arctica*); beneath white, the feathers of breast, etc., edged with grayish, brownish, or dusky. *Nest* in holes, usually in trees or stumps, often about buildings, sometimes among rocks, composed of dried grasses, etc. *Eggs* 4–7, plain pale greenish blue (very rarely white).

a^1. Breast and sides cinnamon or chestnut.
  b^1. Throat cinnamon, like breast; belly white.
    c^1. Breast, etc., deep cinnamon or cinnamon-rufous; sides of neck and malar region blue.
      Adult male: Above rich cobalt-blue (rarely varying to ultramarine, more rarely still to cerulean); *in winter,* the blue duller, the cinnamon of breast, etc., deeper and more purplish, and feathers of back, etc., bordered with rusty; length 5.70–7.00, wing 3.90–4.15 (3.99), tail 2.60–2.90 (2.71), culmen .62–.67 (.65), tarsus .75–.80 (.78). *Adult female:* Above dull grayish, the wings dull blue, the rump, upper tail-coverts, and tail brighter blue; a whitish orbital ring; breast, etc., light dull cinnamon, the throat paler, with a dusky streak along each side; an indistinct whitish malar stripe; wing 3.80–3.90 (3.85), tail 2.50–2.60 (2.53). *Young:* Above dark brownish or grayish, with conspicuous tear-shaped streaks of whitish over whole

back, scapulars, etc.; wings (except coverts) and tail as in adult; beneath white, the feathers of breast, etc., very broadly bordered with dark grayish or brownish; a whitish orbital ring. *Eggs* .82 × .64. *Hab.* Eastern United States, north to Nova Scotia, Ontario, Manitoba, etc., west to base of Rocky Mountains; Bermudas (resident).

766. **S. sialis** (Linn.). **Bluebird.**

*c*². Breast, etc., light ochraceous-cinnamon, the sides of neck and (usually) malar region similar.

*d*¹. Above light greenish blue or cerulean-blue (much as in *S. arctica*), the sexes differing as in *S. sialis;* anal region cinnamon-buff; length 6.40–7.10, wing (male) 4.05–4.20 (4.10), tail 2.70–2.95 (2.79), culmen .47–.50 (.49), tarsus .80–.85 (.82). *Female:* Wing 3.90, tail 2.55. *Hab.* Highlands of Mexico, north to southern Arizona...... 766*a*. **S. sialis azurea** (Baird). **Azure Bluebird.**[1]

*d*². Above rich cobalt-blue, varying to ultramarine, like *S. sialis;* otherwise resembling *S. azurea. Male:* Wing 4.15–4.35 (4.25), tail 2.80–3.00 (2.93), culmen .50, tarsus .62–.65 (.63). *Female:* Wing 4.05–4.10, tail 2.70–2.80. *Hab.* Highlands of Guatemala and Honduras.

S. sialis guatemalæ Ridgw. **Guatemala Bluebird.**[2]

*b*². Throat and belly blue.

Adult male: Above rich smalt-blue (varying to ultramarine), the back usually with more or less of chestnut (sometimes entirely chestnut, rarely entirely blue[3]); lower parts lighter and duller blue, the breast and sides deep cinnamon-chestnut. (Colors duller and more suffused in winter.) Length 6.50-7.12, wing 3.95–4.45 (4.19), tail 2.62–3.05 (2.84), culmen .45–.50 (.48), tarsus .80–.90 (.82). *Adult female:* Head, neck, and upper parts dull gray, paler on throat, browner on back; rump, upper tail-coverts, and tail bright blue, the outer web of lateral tail-feather whitish; wings dull blue; breast and sides dull light cinnamon; belly dull grayish; wing about 4.00, tail 2.50. *Young:* Not always distinguishable with certainty from corresponding stage of *S. sialis*, except by slenderer bill; usually darker, however, especially on lower parts, the throat dull grayish and sides tinged with dull dark brown. *Eggs* .81 × .64. *Hab.* Western United States, north to British Columbia, east to Rocky Mountains, south over table-lands of Mexico.

(100.) 767. **S. mexicana** Swains. **Western Bluebird.**

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[1] Swainson's *Sialia azurea*, usually quoted for this form, is a complete *nomen nudum*. The name was first coupled with a description by Professor Baird (Review Am. B. i. July, 1864, 62), who is therefore to be quoted as its authority.

[2] *S. sialis guatemalæ* Ridgw., Pr. U. S. Nat. Mus. v. June 5, 1882, 13.

[3] This variation is purely individual, and not at all dependent on locality, as supposed by Mr. Seebohm (Cat. B. Brit. Mus. v. 1881, pp. 331–333).

a^2. Breast, etc., fine light greenish blue (in adult male) or brownish gray or grayish brown (in female), the belly and under tail-coverts pure white.

Adult male: Above rich, glossy cerulean-blue, the wings and tail more azure, or cobalt; beneath lighter cerulean-blue, the belly and under tail-coverts white. (*In winter*, the blue of head, neck, back, and breast obscured by grayish brown tips to the feathers.) Length 6.50–7.90, wing 4.60–4.80, tail 3.00–3.15. *Adult female:* Above brownish gray, the primaries dull light blue, the rump, upper tail-coverts, and tail brighter greenish blue; beneath light grayish brown, the belly and under tail-coverts white; a whitish orbital ring. (*In winter* colors deeper, especially on lower parts.) Length 7.00–7.20, wing about 4.25, tail 2.75–2.90. *Young:* Quills and tail-feathers as in adults; above grayish brown, the back usually streaked with white; beneath grayish white, the breast and sides mottled with grayish brown. *Eggs* .87 × .65. *Hab.* Rocky Mountain district, north to Great Slave Lake, south into Mexico; west across Great Basin, to higher ranges along Pacific coast.

768. **S. arctica** SWAINS. **Mountain Bluebird.**

APPENDIX.

The circumstances which necessitate this Appendix being fully set forth in the first paragraph of the Preface to this edition, it only remains to direct attention to the marginal reference numbers, which indicate the exact point in the body of the work where the new matter is to be interpolated.

(1.) Page 4, GENUS **ÆCHMOPHORUS:**

Æ. clarkii is almost certainly only the female of *Æ. occidentalis.*

(2.) Page 14, **Synthliboramphus wumizusume:**

There appears to be no reason for considering this species as North American. (*Cf.* STEJNEGER, Proc. U. S. Nat. Mus. ix. 1885, 524.)

(3.) Page 38, a^2. *Creagrus* is a good genus, and the species following should be called **Creagrus furcatus.** (*Cf.* RIDGWAY, Proc. U. S. Nat. Mus. xii. 1889, 117.)

(4.) Page 57, GENUS **FULMARUS:**

The subspecies of *F. glacialis* are probably reducible to two, an Atlantic and a Pacific form. The older name for the latter is *F. rodgersii*, which was based upon a very light-colored individual. If this view of the case be correct, *F. glacialis glupischa* and the more recently described *F. g. columba* (ANTHONY, The Auk, xii. April, 1895, 105) become synonymes of *F. g. rodgersii*, and *F. g. minor* is a synonyme of *F. glacialis* proper. It is possible that had we good series of specimens *from all the breeding localities* of the species, the above-mentioned supposed forms could be clearly defined; but I have very serious doubts whether their validity can be demonstrated otherwise.

(5.) Page 65, under f^2:

Related to *Æ. phœopygia* is *Æ. hypoleuca*, the comparative diagnostic characters of the two being as follows:

g^1. Larger, and darker above; upper tail-coverts grayish dusky, very abruptly white beneath the surface.. **Æ. phæopygia.**

g^2. Smaller, and paler above; upper tail-coverts ash-gray, much less abruptly white beneath the surface; wing 8.80–9.20, tail 4.50–4.75 (graduated for

1.60–1.65), culmen .98–1.08, tarsus 1.15–1.28, middle toe, with claw, 1.48–1.65. *Hab.* Northwestern Pacific (Bonin Islands, etc.).

Æ. hypoleuca SALV. **Bonin Petrel.**[1]

(6.) Page 71, after **O. homochroa:**

—. **Oceanodroma socorroensis** TOWNSEND. **Socorro Petrel.**[2]

Similar to *O. homochroa*, but rather larger; wing decidedly longer; tail shorter and less deeply forked, with lateral feathers decidedly broader; bill longer; coloration perceptibly darker, especially the under parts, the under wing-coverts without the light-colored patch always conspicuous in *O. homochroa;* shorter lateral upper tail-coverts pale gray, sometimes whitish, producing a more or less conspicuous light-colored patch on each side. Wing 5.80–6.38 (6.11), tail 3.07–3.42 (3.22), forked for .71–.92 (.77), culmen .58–.65 (.62), nasal tubes .23–.29 (.27), tarsus .82–.95 (.90), middle toe, with claw, .88–.93 (.90). *Hab.* Socorro Island, Revillegigedo group, and Coronados Island, Lower California.

(7.) Page 71, after **O. cryptoleucura:**

106.1. **Oceanodroma macrodactyla** (BRYANT). **Guadalupe Petrel.**[3]

Similar to *O. cryptoleucura*, but much larger, the tail much more deeply forked, feet proportionally larger, and rectrices not extensively, if at all, white at the base; length about 8.40, wing 6.10–6.70, tail 3.30–3.90 (forked for .90–1.40), culmen .60, tarsus .86–1.00, middle toe, with claw, 1.10–1.18. *Hab.* Guadalupe Island, Lower California.

(8.) Page 75, after **S. cyanops:**

141.1. **Sula nebouxii** MILNE-EDWARDS. **Blue-footed Booby.**[4]

Head, neck, and entire under parts white, the first two streaked with sooty grayish; back and scapulars dusky brownish, the feathers tipped with whitish; legs and feet deep blue in life. (Young unknown.) Length about 32.00–34.50, wing 15.50–17.50, tail 8.00–10.00, culmen 3.98–4.55, tarsus 1.85–2.30, middle toe 2.65–3.05. *Hab.* Pacific coast, from Gulf of California to the Galapagos Archipelago and coast of Chili.

(9.) Page 75, after "*d*^{1}. Feet greenish or yellowish" cancel what follows and substitute:

e^1. Color of head and neck uniform dark sooty brown, in both sexes, abruptly defined above against the lighter brown of the back. *Hab.* Tropical and subtropical waters on the Atlantic side of America, north to Georgia; also various parts of eastern hemisphere... 115. **S. sula** (LINN.). **Booby.**

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[1] *Œstrelata hypoleuca* SALVIN, Ibis, July, 1888, 359 (Krusenstern Island).

[2] *Oceanodroma socorroensis* TOWNS., Proc. U. S. Nat. Mus. xiii. No. 799, Sept. 9, 1890, 134.

[3] *Oceanodroma leucorhoa macrodactyla* BRYANT, Bull. Calif. Acad. Sci. ii. No. 8, July 23, 1887, 450. —*Oceanodroma macrodactyla* A. O. U., Check List, abridged ed. 1889, No. 106.1.

[4] *Sula nebouxii* MILNE-EDW., Ann. Soc. Nat. Zool. 52, Ann. vi. ser. T, xiii. No. 2–4, Art. 4, p. 37, pl. 14 (Chili).—*Sula gossii* RIDGW., Auk, v. July, 1888, 241 (Gulf of California).

e^2. Color of head and neck (uniform dark sooty brown in female, grayish brown or drab fading into white on anterior part of head in male) uniform in color with the back. *Hab.* Pacific coast of America and adjacent islands, from the Gulf of California to the Galapagos Archipelago.

115.1. **S. brewsteri** Goss. **Brewster's Booby.**[1]

(**10.**) Page 92, under **Anas fulvigula:**

134*a*. **Anas fulvigula maculosa** (SENN.). **Mottled Duck.**[2]

Similar to *A. fulvigula*, but cheeks streaked with brown, instead of being plain buff; speculum metallic purple instead of green; the general effect of the coloration mottled rather than streaked, and the lighter markings in general "pale buff or isabella color" instead of a rich, deep buff. *Hab.* Northern Mexico (Chihuahua, etc.) and Texas, north to Kansas (and Utah?).

(**11.**) Page 127, a^2. *Ardetta* is now recognized as a good genus, and the North American species therefore known as *A. exilis* and *A. neoxena*. The latter has become better known, most of the specimens taken having been found in Ontario. The sexes of this species, which is exceedingly distinct, appear to be essentially alike in coloration.

(**12.**) Pages 128, 129, GENUS **ARDEA** LINNÆUS.

The examination of eight additional specimens of *Ardea wuerdemanni* renders necessary a revision of the diagnosis of this form and its allies, as follows:

e^2. Color nearly uniform bluish gray above, the lower parts usually striped with black and white (sometimes entirely white).

f^1. Adult with head entirely white, except (usually) black or dusky streaks on forehead, or (very rarely) a blackish patch on sides of crown or occiput, beneath edge of crest; shoulder-knots broadly striped with white, and (usually) tinged with rusty; lowermost wing-coverts with more or less of their outer webs white; outer web of exterior tail-feather with a large white wedge-shaped patch on basal portion; lower parts white (the anal region entirely so), the breast and belly (medially) usually striped or streaked with black, dusky, or brownish gray; gray of upper parts of an ashy tint; length 48.00–50.00, wing 18.75–21.00 (19.39), tail 6.25–8.00 (7.21), culmen 5.75–6.70 (6.14), depth of bill at base 1.20–1.30 (1.24), tarsus 7.30–8.75 (7.80), naked portion of tibia 4.50–5.50 (4.99), middle toe 4.20–5.20 (4.63). *Hab.* Southern extremity of Florida, chiefly (?) in the vicinity of Cape Sable, and on Florida Keys; Cape Florida (?); Jamaica (?); accidental in southern Illinois (Mount Carmel, Sept. 11–22, 1876).

—. **A. wuerdemanni** BAIRD. **Würdemann's Heron.**

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[1] *Sula brewsteri* Goss, Auk, v. July, 1888, 242.

[2] *Anas maculosa* SENNETT, Auk, vi. July, 1889, 263.—*Anas fulvigula maculosa* A. O. U. COM., Auk, vii. Jan. 1890, 61.

f^2. Adult with sides of forehead (to considerably in front of eyes), together with whole crown and occiput (beneath crest), including longer crest-feathers, uniform deep black; forehead and centre of crown pure white, without dusky streaks; shoulder-knots entirely deep black, or (rarely) narrowly streaked with white, and without admixture of rusty; lowermost wing-coverts without white on outer webs; outer web of exterior tail-feather without distinct wedge-shaped space of white; breast, belly, and anal region deep black (the last entirely so), the breast and belly broadly striped with white; gray of upper parts of a deep plumbeous tint.

g^1. Larger, with legs and feet yellowish brown or olive-yellowish; length about 48.00–54.00, wing 19.50–21.00 (20.00), tail 7.15–8.00 (7.58), exposed culmen 5.90–6.90 (6.25), depth of bill at base 1.10–1.30 (1.19), tarsus 7.85–8.40 (8.19), middle toe 4.65–5.15 (4.83), bare portion of tibia 4.45–5.60 (5.05). *Hab.* Florida, chiefly (?) on western side; south to Oyster Bay, north to Gainesville.................. 193. **A. wardi** Ridgw. **Ward's Heron.**

g^2. Smaller, with black or dusky legs and feet, the tibia, only, yellowish; length about 40.00–48.00, wing 18.00–19.50 (18.58), tail 7.00–7.50 (7.23), exposed culmen 5.45–5.95 (5.68), depth of bill at base 1.05–1.17 (1.14), tarsus 6.75–7.85 (7.16), middle toe 3.90–4.50 (4.18), naked portion of tibia 4.00–4.50 (4.20). *Hab.* Whole of temperate North America (except middle and southern Florida); north to Hudson's Bay and Sitka, south through Middle America to Colombia and Venezuela (including Curaçao); Bermuda; Galapagos?

194. **A. herodias** Linn. **Great Blue Heron.**

A. wuerdemanni is probably merely an intermediate plumage connecting *A. occidentalis* with *A. wardi*, the three forms doubtless merely color-phases of one species, for which *A. occidentalis* is the older name.

(13.) Page 131, **Ardea pealei:**

This is unquestionably a white phase of *A. rufescens.*

(14.) Page 132, under **Ardea virescens:**

201*a*. **Ardea virescens frazari** Brewst. **Frazar's Green Heron.**[1]

Much darker than *A. virescens,* with the coloration much more uniform, the neck very dark purplish chestnut, strongly glaucous in certain lights. *Hab.* Southern portion of Lower California (vicinity of La Paz).

201*b*. **Ardea virescens anthonyi** Mearns. **Anthony's Green Heron.**[2]

Larger and much paler throughout than *A. virescens;* chestnut of the neck much paler and more cinnamomeous; white streaks of foreneck and white margins of wing-coverts much more extended. *Hab.* Arid districts of southwestern United States, north to the Sacramento Valley, California, south (in winter) to Tehuantepec, Mexico.

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[1] *Ardea virescens frazari* Brewst., Auk, v. Jan. 1888, 83.

[2] *Ardea virescens anthonyi* Mearns, Auk, xii. July, 1895, 257.

(15.) Page 137, under **Rallus longirostris crepitans:**

211*c*. **Rallus longirostris caribæus** Ridgw. **Caribbæan Clapper Rail.**[1]

Similar to *R. l. crepitans*, but coloration rather deeper, with the back, etc., more distinctly striped with dusky; wing 5.55–5.90 (5.76), culmen 2.12–2.55 (2.38), least depth of bill .25–.30 (.27), tarsus 1.95–2.12 (2.02), middle toe, 1.70–1.95 (1.85). *Hab.* Lesser Antilles, Jamaica, and coast of southern Texas (Corpus Christi and Galveston).

(16.) Page 137, under **Rallus longirostris saturatus:**

211*b*. **Rallus longirostris scottii** Senn. **Scott's Rail.**[2]

Similar to *R. l. saturatus*, but much darker above (the back, etc., brownish black streaked with olive-grayish), the foreneck and sides of chest shaded with olive-grayish. *Hab.* Western Florida.

(17.) Page 166, under **Totanus solitarius:**

256*a*. **Totanus solitarius cinnamomeus** Brewster.
Western Solitary Sandpiper.[3]

"Similar to *T. solitarius*, but larger, the wings grayer, the light spots on the back, scapulars, and wing-coverts brownish cinnamon instead of white or buffy whitish; the sides of the head with more whitish, especially on the lores. No well-defined loral stripe." *Hab.* Western North America, from Lower California and Arizona to British Columbia.

The range of true *T. solitarius* does not include the area inhabited by *T. solitarius cinnamomeus.*

(18.) Page 167, Genus **SYMPHEMIA** Rafinesque.

Mr. Brewster has recently separated the western birds of this species as a geographical race, the main distinctive characters of which are as follows:

*a*¹. Smaller, with relatively shorter and thicker bill; *summer adults* with ground-color of upper parts darker, more olive-grayish, more heavily spotted or barred with dusky, the anterior and lateral lower parts also more heavily marked with dusky; wing 7.06–7.75 (7.36), tail 2.71–3.30 (2.91), exposed culmen 2.02–2.31 (2.19), tarsus 2.08–2.42 (2.29). *Hab.* Atlantic coast of United States........................ 258. **S. semipalmata** (Gmel.). **Willet.**

*a*². Larger, with relatively longer and slenderer bill; *summer adults* with ground-color of upper parts paler, more ashy, gray, less heavily marked with dusky, the anterior and lateral lower parts also less heavily marked; wing 7.88–8.26 (8.11), tail 3.10–3.50 (3.29), exposed culmen 2.28–2.70 (2.46), tarsus 2.45–2.95 (2.66). *Hab.* Western North America, east to Mississippi Valley (Illinois, etc.) and Gulf States (sparingly to South Atlantic States in winter); south through Mexico, etc., in winter.

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[1] *Rallus longirostris caribæus* Ridgway, Bull. Nutt. Orn. Club, v. July, 1880, 140.—Sennett, Auk, v. 1888, 319 (Corpus Christi and Galveston, Texas).

[2] *Rallus longirostris scottii* Senn., Auk, v. July, 1888, 305.

[3] *Totanus solitarius cinnamomeus* Brewst., Auk, vii. Oct. 1890, 377.

258*a*. **S. semipalmata inornata** Brewst. **Western Willet.**[1]

(**19.**) Page 171, after **Numenius phæopus:**

The Common Curlew of Europe, *Numenius arquata* (Linn.),[2] is said to have been taken on Long Island (*cf.* The Auk, ix. 1892, pp. 390–392). It is very similar in coloration to *N. phæopus*, having the lower back and rump white, as in that species, but is very much larger, nearly or quite equalling *N. longirostris* in size.

(**20.**) Page 182, under **Hæmatopus galapagensis:**

286.1. **Hæmatopus frazari** Brewst. **Frazar's Oyster-catcher.**[3]

Very similar to *H. galapagensis*, but bill and toes shorter, back not so dark, more white on under primary-coverts, and under tail-coverts spotted with blackish; wing 9.50–9.90, tail 4.00–4.25, culmen 2.70–3.00, greatest depth of bill .50–.52, tarsus 2.20–2.30, middle toe 1.40–1.55. *Hab.* Lower California (both coasts).

(**21.**) Page 186, after **Dendragapus,** insert:

c^3. Tail shorter than wing, emarginated or forked, its lateral feathers curved outward at tip.. **Tetrao.**

(**22.**) Page 191, under **Oreortyx pictus plumiferus:**

292*b*. **Oreortyx pictus confinis** Anthony. **San Pedro Partridge.**[4]

Similar to *O. p. plumiferus*, but upper parts much grayer, the back, rump, and upper tail-coverts being gray very slightly tinged with olive; bill stouter. *Hab.* San Pedro Mountains, Lower California.

(**23.**) Pages 191–193, Genus **CALLIPEPLA** Wagler.

On page 193, under "c^2," insert the following:

d^1. Throat with white predominating; rusty markings on upper parts brighter and more extended, rump more olivaceous, tail less bluish gray, and white spots on lower parts smaller; *adult female* with crest chiefly light brownish, throat dull white very faintly or narrowly streaked with dusky (mere shaft-streaks), and back distinctly barred with light tawny. *Hab.* Vicinity of Mazatlan.

C. elegans (Less.). **Elegant Partridge.**

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[1] *Cf.* Auk, iv. April, 1887, 145.

[2] *Scolopax arquata* Linn., S. N. ed. 10, i. 1758, 145. *Numenius arquatus* Lath., Gen. Synop. Suppl. i. 1787, 291.

[3] *Hæmatopus frazari* Brewst., Auk, v. Jan. 1888, 84.

[4] *Oreortyx picta confinis* Anthony, Proc. Cal. Acad. Sci. 2d ser. ii. Oct. 11, 1889, 74.

*d*². Throat with black predominating; rusty markings on upper parts duller and less extended, rump less olivaceous, tail more bluish gray, and white spots on lower parts larger; *adult female* with crest uniform blackish, whole throat thickly speckled or streaked with blackish, back nearly uniform gray, and markings of lower parts larger and coarser. *Hab.* Sonora (vicinity of Campos).
C. elegans bensoni RIDGW. **Benson's Partridge.**[1]

(24.) Page 196, after species of **Dendragapus**:

GENUS **TETRAO** LINNÆUS.[2]

Adult male: Glossy blue-black, the wings dusky with a conspicuous white patch on secondaries; under tail-coverts white; tail deeply emarginate or forked, the four outermost rectrices strongly curled outward at tips. Length about 23.50, wing about 10.50, tail 8.80. *Adult female* tawny-brown, barred and spotted with black; tail emarginate, the lateral rectrices not distinctly, if at all, curved outward at tips. Length about 17.00, wing 8.90, tail 4.50. *Hab.* Europe and northern and central Asia. Introduced into Newfoundland, and said to be naturalized there.. **T. tetrix** LINN.[3] **Black Cock.**

(25.) Page 203, under **Tympanuchus americanus**:

305*a*. **Tympanuchus americanus attwateri** (BENDIRE).
Attwater's Prairie Hen.[4]

"Smaller than *T. americanus*, darker in color, more tawny above, usually with more pronounced chestnut on the neck; smaller and more tawny light-colored spots on wing-coverts, and much more scantily feathered tarsus, the latter never feathered down to the base of the toes, even in front; a broad posterior stripe of bare skin being always exposed, even in winter, while in summer much the greater part of the tarsus is naked." *Hab.* Coast districts of southwestern Louisiana and Texas.

(26.) Page 205, under FAMILY **PHASIANIDÆ**:

Add, under "*a*¹. . . . (Subfamily *Phasianinæ*)," the following:

*b*¹. Head not crested.. **Phasianus.**
*b*². Head conspicuously crested.
  *c*¹. Neck with a conspicuous erectile ruff........................ **Chrysolophus.**[5]
  *c*². Neck without any ruff... **Gennæus.**[6]

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[1] *Callipela elegans bensoni* RIDGW., Forest and Stream, xxviii. No. 6, March 3, 1887, 106.

[2] *Tetrao* LINN., Syst. Nat. ed. 10, i. 1758, 159. Type, by elimination, *Tetrao tetrix* LINN.

[3] *Tetrao tetrix* LINN., Syst. Nat. ed. 10, i. 1758, 159.

[4] *Tympanuchus attwateri* BENDIRE, Forest and Stream, xl. No. 20, May 18, 1893, 425.—*Tympanuchus americanus attwateri* A. O. U. COM., Auk, xi. Jan. 1894, 46.

[5] *Chrysolophus* J. E. GRAY, Illustr. Indian Zool. ii. 1834, pl. 41, fig. 2. Type, *Phasianus pictus* LINN.

[6] *Gennæus* WAGLER, Isis, 1832, 1228. Type, *Phasianus nycthemerus* LINN.

(27.) Page 206, after species of **Phasianus**:

GENUS CHRYSOLOPHUS J. E. GRAY.

*a*¹. Ruff or cape of male golden orange, barred with black; entire under parts, except chin and throat, bright red; tail light tawny or cinnamon, barred and reticulated with black. Length about 40 inches, wing about 7.70, tail 27. *Adult female* mottled brown above the wings heavily barred with dusky; top and hinder part of head, neck, chest, sides, and flanks regularly barred with dusky; rest of under parts plain light buff, also the interspaces between dusky bars on chest and lower portion of sides and flanks. Length about 24, wing 7.00, tail 14. *Hab.* Mountains of southern and western China. Introduced into western Oregon.

C. pictus.[1] **Golden Pheasant.**

*a*². Ruff or cape of adult male pure white, barred with black; chest metallic green, barred with black; breast, sides, etc., pure white; tail white, barred and lined with black. Length about 50 inches, wing 8.20, tail 36.00. *Hab.* Mountains of western China and eastern Thibet.

C. amherstiæ (LEADB.). **Lady Amherst's Pheasant.**[2]

GENUS GENNÆUS WAGLER.

Adult male with crest and under parts glossy blue-black; upper parts (except crest) pure white, marked (except on greater part of longer rectrices) with V-shaped pencillings of black; face, legs, and feet bright red. Length about 40 inches, wing 10.50, tail 24. *Adult female* plain brown above; beneath similar, with paler shaft-streaks, the posterior parts and thighs irregularly mottled with zigzag lines of dusky; tail (except middle feathers) irregularly barred with black and white; face, legs, and feet dull red. Length about 20.50, wing 9.10, tail 9.80. *Hab.* Southern China. Introduced into western Oregon.

G. nycthemerus LINN. **Silver Pheasant.**[3]

(28.) Page 207, under **Meleagris gallopavo**:

310*b*. **Meleagris gallopavo osceola** SCOTT. **Florida Wild Turkey.**[4]

Similar to *M. gallopavo*, but darker, especially the remiges; inner secondaries plain dull grayish brown, and primaries brownish black narrowly barred with white, the white bars not touching the shafts of the quills. *Hab.* Southern and middle Florida.

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[1] *Phasianus pictus* LINN., Syst. Nat. ed. 10, i. 1758, 158.—*Chrysolophus pictus* J. E. GRAY, Illustr. Ind. Zool. ii. 1834, pl. 41, fig. 2.

[2] *Phasianus amherstiæ* LEADB., Trans. Linn. Soc. xvi. 1828, 129, pl. 15. *Chrysolophus amherstiæ* G. R. GRAY, List Gallinæ Brit. Mus. 1867, 30.

[3] *Phasianus nycthemerus* LINN., Syst. Nat. ed. 10, i. 1758, 159. *Gennæus nycthemerus* WAGLER, Isis, 1832, 1228.

[4] *Meleagris gallopavo osceola* SCOTT, Auk, vii. Oct. 1890, 376.

(29.) 310*c*. **Meleagris gallopavo ellioti** Sennett. **Rio Grande Turkey.**[1]

Similar to *M. gallopavo*, but lower back and rump uniform black (showing steel-gray bars in certain lights), and tips of tail-feathers and longer coverts cinnamon or cinnamon-buff instead of chestnut. *Hab.* Lowlands of southern Texas and northeastern Mexico.

(30.) Page 211, under **Columba fasciata**:

312*a*. **Columba fasciata vioscæ** Brewster. **Viosca's Pigeon.**[2]

"Similar to *C. fasciata*, but with the tail-band wanting or only faintly indicated, the general color lighter and more uniform, the vinaceous tints, especially on the head, neck, and breast, much fainter and more or less replaced by bluish ash." *Hab.* Southern portions of Lower California.

(31.) Pages 214, 215, **COLUMBIGALLINA** Boie.

C. passerina varies a great deal with locality, and some of its variations seem sufficiently marked and constant to merit formal recognition. The following forms occurring north of the parallel of 18° N. appear fairly well defined:

b^1. Larger, with bill yellow or red for at least basal half (rarely obscured in dried skins).
  c^1. Back and rump grayish olive, or light grayish brown.
    d^1. Much deeper colored, with rather shorter wings and much larger bill, the latter always (?) yellow basally; wing 3.30–3.60 (3.41), exposed culmen .43–.48 (.47), tarsus .62–.65 (.64). *Hab.* South Atlantic and Gulf States.
      320. **C. passerina terrestris** Chapm.[3] **Ground Dove.**
    d^2. Much paler, with rather longer wings and much smaller or more slender bill, the latter often (always in fully adult males?) red basally; wing 3.30–3.60 (3.46), exposed culmen .42–.47 (.44), tarsus .60–.66 (.62). *Hab.* Southwestern United States (Texas to Arizona and Lower California), and south through Mexico (both coasts) to Central America...... 320*a*. **C. passerina pallescens** (Baird). **Mexican Ground Dove.**[4]
  c^2. Back and rump deep olive-brown.
    Plumage in general much deeper than in preceding forms; wing 3.10–3.40 (3.28), exposed culmen .41–.44 (.42), tarsus .60–.63 (.62). *Hab.* Socorro Island, western Mexico; Tres Marias?
      C. passerina socorroensis Ridgw. **Socorro Ground Dove.**[5]

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[1] *Meleagris gallopavo ellioti* Sennett, Auk, ix. April, 1892, 167, pl. 3.

[2] *Columba fasciata vioscæ* Brewst., Auk, v. Jan. 1888, 86.

[3] *Columbigallina passerina terrestris* Chapm., Bull. Am. Mus. Nat. Hist. iv. 1892, 292.

[4] *Chamæpelia passerina* var. *pallescens* Baird, Pr. Phil. Ac. 1859, 305.

[5] New subspecies; type, No. 50829, U. S. Nat. Mus., Socorro; A. J. Grayson.

b^2. Smaller, with bill chiefly or entirely black or dusky (rarely yellowish or orange at base).

Similar in color of plumage to *C. passerina pallescens*, but still paler, with upper parts more ashy; wing 3.10–3.30 (3.21), exposed culmen .40–.47 (.43), tarsus .60–.64 (.62). *Hab.* Bahamas; Greater Antilles?

C. passerina bahamensis (MAYN.). **Bahaman Ground Dove.**[1]

(32.) Page 252, after subgenus *Tinnunculus* VIEILL., insert:

359.1. **Falco tinnunculus** LINN. **Kestrel.**[2]

Adult male: Top of head and hind neck bluish gray, with narrow blackish shaft-streaks; back, scapulars, and wing-coverts vinaceous-cinnamon or cinnamon-rufous, marked with transverse cordate spots or bars of black; rump, upper tail coverts, and tail bluish gray, the latter tipped with whitish and crossed by a subterminal band of black; forehead and under parts buffy whitish or buffy, marked on chest with streaks of dusky and on sides and flanks with oval or tear-shaped spots of the same. *Adult female:* Above light rufous or cinnamon, including the parts which are bluish gray in the male; head and neck streaked with dusky, and other portions, including tail, barred with the same; beneath much as in the male. Length about 12.50–15.00, wing 8.40–9.20, tail 6.70–7.00, tarsus 1.30–1.60. The young male is said to resemble the adult female.

(33.) Page 261, to replace all after first clause under "d^1":

e^1. The darker markings fine and numerous, giving the plumage a delicately pencilled aspect. *Hab.* Northwestern Mexico, and contiguous portion of United States in Arizona and New Mexico.

373*f*. **M. asio cineraceus** RIDGW. **Mexican Screech Owl.**[3]

e^2. The darker markings coarse and heavy, producing a marbled and spotted appearance to the plumage. *Hab.* Eastern foot-hills of Rocky Mountains in Colorado and New Mexico.

373*g*. **M. asio aikeni** BREWST. **Aiken's Screech Owl.**[4]

(34.) Page 262, substitute the following for matter under "d^1":

d^1. Darker colored, without white largely predominating on under parts and upper parts never light buffy gray or pale grayish cinnamon.

e^1. Coloration identical with that of *M. a. bendirei*, but size much greater; wing 6.96–7.50, tail 3.80–4.25. *Hab.* Between eastern slope of Cascade Mountains and western slope of Rocky Mountains, in Oregon, Washington, Idaho, and Montana.

373*h*. **M. asio macfarlanei** BREWST. **MacFarlane's Screech Owl.**[5]

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[1] *Chamæpelia bahamensis* MAYN., Am. Exchange and Mart, iii. No. 6, Feb. 5, 1887, 69.

[2] *Falco tinnunculus* LINN., S. N. ed. 10, i. 1758, 90. (See CORY, Auk, v. Jan. 1888, 110; April, 1888, 205.)

[3] *Megascops asio cineraceus* RIDGW., Auk, xii. Oct. 1895, 390. (= *M. a. trichopsis* of first edition and of recent authors, but not *Scops trichopsis* WAGLER.)

[4] *Megascops asio aikeni* BREWST., Auk, viii. April, 1891, 139.

[5] *Megascops asio macfarlanei* BREWST., Auk, viii. April, 1891, 140.

e^2. Coloration decidedly tawny brown, or else dark slaty brown above with the usual blackish pencillings indistinct.

f^1. Large like *M. a. macfarlanei;* coloration very tawny; wing 7.40, tail 4.00. *Hab.* southern Alaska.

373*d.* **M. asio kennicottii** (ELLIOT). **Kennicott's Screech Owl.**

f^2. Smaller, the coloration darker and less tawny; dichromatic, the gray phase much darker and more uniform above than in other races. *Hab.* Shores and islands of Puget Sound, etc., north to Vancouver Island, New Westminster, and Comax, south, along the coast, to Portland, Oregon.

—. **M. asio saturatus** BREWSTER. **Puget Sound Screech Owl.**[1]

(35.) Page 262, under **Megascops flammeolus:**

374*a.* **Megascops flammeolus idahoensis** MERRIAM. **Dwarf Screech Owl.**[2]

Similar to *M. flammeolus,* but smaller and paler, especially on the under parts, where the darker pencillings are very much narrower; facial ring tawny-ochraceous. *Hab.* Mountains of Idaho.

In western Mexico (vicinity of Mazatlan), and possibly in Lower California, occurs a species nearly allied to *M. brasilianus* (GM.) of South America, but apparently quite distinct. It belongs under section a^2, having the toes completely naked, but is very different from *M. flammeolus* in color and dimensions. It is an undescribed species, which may be named *Megascops hastatus* and characterized as follows:

Toes completely naked; upper parts light grayish brown, mixed or mottled with paler and spotted with blackish; lower parts delicately but irregularly barred with dark brown, on a whitish ground, and marked also with irregular mesial streaks of brownish black, most conspicuous on chest; legs whitish, barred with dark brown; wing 6.00–6.10, tail 3.40–3.50. *Hab.* Western Mexico (vicinity of Mazatlan); La Paz, Lower California?

(36.) Page 266. In diagnosis of **Glaucidium gnoma** cancel "color of back," etc., and add after "379. **G. gnoma,**" etc.:

379*a.* **Glaucidium gnoma californicum** (SCL.). **California Pygmy Owl.**[3]

Similar to *G. gnoma* but browner, the color of back, etc., approximating a warm bistre- or vandyke-brown hue, sometimes approaching chestnut-brown. *Hab.* Pacific coast, from San Francisco to British Columbia.

379.1. **Glaucidium hoskinsii** BREWST. **Hoskins's Pygmy Owl.**[4]

Similar to *G. gnoma,* but smaller; stripes on lower parts smaller and browner; cervical collar more distinct and more tawny, with less of black above it; wing 3.30–3.40, tail 2.60–2.70, culmen, .37–.38. *Hab.* Mountains of southern Lower California.

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[1] *Megascops asio saturatus* BREWST., Auk, April, 1891, 141.

[2] *Megascops flammeolus idahoensis* MERRIAM, North American Fauna, No. 5, July 30, 1891, 96, pl. 1.

[3] *Glaucidium californicum* SCL., P. Z. S. 1857, 4, 146.—*Glaucidium gnoma californicum* BENDIRE, Auk, v. Oct. 1888, 366.

[4] *Glaucidium gnoma hoskinsii* BREWST., Auk, v. April, 1888, 136.—*Glaucidium hoskinsii,* A. O. U. Check List, abridged ed. 1889, No. 379.1.

(37.) Page 268. GENUS **ARA** BRISSON.

Two species occur in southern Mexico, one of them common as far north as Mazatlan. Their characters are as follows:

*a*¹. General color grass-green, with forehead and part of tail-feathers red; rump, tail-coverts, and tip of tail light blue; wing about 14.00, tail about 15.00. *Hab.* Mexico to Bolivia.
A. militaris (LINN.). **Military Macaw.**[1]

*a*². General color vermilion-red, with middle wing-coverts chrome-yellow, the quills dark blue, the tail blue and red; a little larger than *A. militaris*, the tail much longer. *Hab.* Southern Mexico to Bolivia.
A. macao (LINN.). **Red yellow and blue Macaw.**[2]

(38.) Page 269, under "*a*²" preceding GENUS **RHYNCHOPSITTA,** insert:

*b*¹. Tail rounded, half as long as wing.. *Amazona.*
*b*². Tail even, less than half as long as wing.................................. *Pionus.*[3]

GENUS **AMAZONA** LESSON.

Several Mexican species, distinguished as follows:

*a*¹. Wing more than 7.50; bill not bright yellow; primary coverts always green, and 3–6 innermost secondaries with outer webs chiefly red.
  *b*¹. Anterior border of wing with more or less of red; forehead (in adult whole head and neck) yellow.
    Adult: Whole head and neck yellow. *Young* with yellow on head and red on anterior border of wing more restricted, according to age. Wing 8.70–9.50, tail 4.50–5.50. *Hab.* Mexico, from Tehuantepec to Mazatlan, the Tres Marias, and Tamaulipas.
    A. oratrix RIDGW. **Double Yellow-head Parrot.**[4]
  *b*². Anterior border of wing without trace of red; forehead green or red.
    *c*¹. Outer tail-feather without trace of red or yellow spot on basal portion of inner web.
      *d*¹. Forehead green; feathers of breast, etc., without trace of blackish tips; whole top of head light blue, or bluish green; wing 9.30–10.20, tail 5.20–6.20. *Hab.* Eastern Mexico (Mirador) and south to Nicaragua.
      A. guatemalæ (HARTL.). **Blue-crowned Parrot.**[5]

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[1] *Psittacus militaris* LINN., S. N. ed. 12, i. 1766, 159. *Ara militaris* GRAY, Gen. B. ii. 1845, 412.

[2] *Psittacus macao* LINN., S. N. ed. 10, i. 1758, 96. *Ara macao* GRAY, List Psitt. Brit. Mus. 1859, 26.

[3] *Pionus* WAGLER, Mon. Psitt. 1832, 497. Type, *Psittacus menstruus* LINN.

[4] *Chrysotis levaillantii* GRAY, List Psitt. Brit. Mus. 1859, 79; *nec Amazona levaillantii* LESS., 1831.

[5] *Chrysotis guatemalæ* HARTL., Verz. Brem. Samml. 1844, 87. *Amazona guatemalæ* SCHLEG., Mus. P.-B. Rev. Psitt. 1874, 27.

*d*². Forehead red; feathers of breast, etc., narrowly tipped with blackish.

*e*¹. Forehead and crown vermilion-red; sides of occiput (forward to orbital region) dull blue; wing 8.40–8.50, tail about 4.50. *Hab.* Northeastern Mexico.

A. viridigenalis (Cass.). **Tamaulipas Parrot.**[1]

*e*². Forehead purplish red; crown and occiput lilac-bluish; the feathers narrowly tipped with blackish; wing 7.60–8.20, tail 4.80–5.50. *Hab.* Western Mexico, from Tehuantepec to Sonora (Alamos).

A. finschi (Scl.). **Finsch's Parrot.**[2]

*c*². Outer tail-feather with a more or less distinct red or yellow spot on basal portion of inner web.

Adult: Forehead and upper half of lores red; lower half of lores, and backward beneath eyes, yellow; top of head pale bluish or lilac superficially. *Young:* Similar to adult, but yellow replaced by light green. Wing 8.00–8.70, tail 4.70–5.20. *Hab.* Eastern Mexico (Mirador) and south to Honduras and Vera Paz, Guatemala.

A. autumnalis (Linn.). **Autumnal Parrot.**[3]

*a*². Wing not more than 7.50; bill bright yellow; primary coverts (sometimes alula also) carmine-red in adult; outer webs of all the secondaries wholly deep blue. (*Adult* with orbits and part or whole of lores deep carmine; forehead, sometimes crown also, white or pale yellow.)

*b*¹. *Adult:* Forehead (only) white or pale yellow; crown blue; anterior border of wing entirely green; alula carmine-red. *Young:* White of forehead and red of lores and orbits much restricted (or altogether wanting?); primary coverts and alula green. Wing 6.30–7.50, tail 3.30–4.20. *Hab.* Mexico (Yucatan to Mazatlan and Sonora) and south to Costa Rica.

A. albifrons (Sparrm.). **White-fronted Parrot.**[4]

*b*². *Adult:* Forehead and more or less of crown white; upper half of lores yellow; a black spot on ear-coverts; anterior border of wing carmine-red; alula (except sometimes innermost feather) green. *Young:* No white on head, red barely indicated, yellow more restricted, no red on anterior border of wing, and primary coverts green. Wing 6.90–7.10, tail 3.50–3.80. *Hab.* Coast of Yucatan (including Cozumel) and Honduras.

A. xantholora Gray. **Yellow-lored Parrot.**[5]

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[1] *Chrysotis viridigenalis* Cass., Proc. Ac. Nat. Sci. Philad. vi. 1853, 371.

[2] *Chrysotis finschi* Scl., P. Z. S. 1864, 298; *ib.* 1870, pl. 34.

[3] *Psittacus autumnalis* Linn., S. N. ed. 12, i. 1766, 147. *Amazona autumnalis* Schleg., Mus. P.-B. Psitt. 1864, 51.

[4] *Psittacus albifrons* Sparrm., Mus. Carls. 1787, pl. 52. *Amazona albifrons* Schleg., Mus. P.-B. Psitt. 1864, 59.

[5] *Chrysotis xantholora* Gray, List Psitt. Brit. Mus. 1859, 83. *Amazona xantholora* Schleg., Mus. P.-B. Psitt. 1864, 59.

(39.) Page 272, preceding GENUS **CROTOPHAGA**, insert:

c^1. Nostril narrow, longitudinal, with only a superior raised margin; under parts immaculate.. **Coccyzus.**

c^2. Nostril broadly oval or nearly circular, with raised margin all round; under parts barred with dusky (throat and chest plain light gray in adults). **Cuculus.**[1]

(40.) Page 274, after species of **Coccyzus**, add:

GENUS **CUCULUS** LINNÆUS.

Adult male: Above plain brownish gray, the lower back, rump, and upper tail-coverts more bluish gray; tail decidedly darker, especially subterminally, each feather tipped with white (narrower and sometimes worn away on middle rectrices), the outermost feather with a series of seven or eight white spots along the shaft (often extending across the outer web), these spots enlarged into bars extending across both webs on the basal portion; the other rectrices with a series of white longitudinal marks along the shaft (sometimes obsolete on the intermediæ) and the inner webs irregularly edged with white. Chin, throat, and chest plain light ash-gray; rest of under parts white or buffy white, barred with dusky (under tail-coverts more sparsely and irregularly marked). *Young:* Above barred and transversely spotted with dark brown and rusty, many of the feathers tipped with whitish; beneath, including chin, throat, and chest, buffy white barred with dusky. Length about 12.50–13.75, wing 8.50–9.30, tail 6.50–6.80, exposed culmen .80–.90. *Hab.* Northeastern Asia (Himalayas to Kamtschatka); accidental on St. Paul's Island, Bering Sea.

C. canorus telephonus (HEINE). **Kamtschatkan Cuckoo.**[2]

(41.) Page 283, to replace last sentence, etc., under "e^1":

f^1. Smoke-gray or light smoky brown below. *Hab.* Pacific coast from San Francisco north to British Columbia.

393*c*. **D. villosus harrisii** (AUD.). **Harris's Woodpecker.**

f^2. White below. *Hab.* Interior of western North America, south to tablelands of Mexico; southern California and northern Lower California.

393*d*. **D. villosus hyloscopus** (CAB.). **Cabanis's Woodpecker.**[3]

(42.) Page 283, to replace last paragraph, etc., under "d^2":

e^1. Under parts smoky gray or light smoky brown; smaller. *Hab.* Pacific coast, from northern California to British Columbia... 394*a*. **Dryobates pubescens gairdnerii** (AUD.). **Gairdner's Woodpecker.**

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[1] *Cuculus* LINN., Syst. Nat. ed. 10, i. 1758, 110. Type, by elimination, *C. canorus* LINN.

[2] *Cuculus telephonus* HEINE, Journ. für Orn. 1863, 352.—*Cuculus canorus telephonus* STEJNEGER, Bull. U. S. Nat. Mus. No. 29, 1885, 224.

[3] *Dryobates hyloscopus* CABAN., Mus. Hein. iv. June 25, 1863, 69.—*Dryobates villosus hyloscopus* A. O. U. COM., Suppl. Check List, 1889, 9.

*e*². Under parts white; averaging larger, more white spotting on wing and under tail-coverts immaculate. *Hab.* Interior of western North America, south to New Mexico; west to southern California..... 394*b*. **Dryobates pubescens homorus** (CABAN.) **Batchelder's Woodpecker.**[1]

(43.) Page 291, after **M. formicivorus bairdi:**

—. **Melanerpes formicivorus aculeatus** MEARNS. **Mearns's Woodpecker.**[2]

Intermediate in general size and plumage between *M. formicivorus* and *M. f. bairdi*, but with the bill much smaller and more slender than either. *Hab.* Western Texas to Arizona, and south through mountainous parts of northwestern Mexico.

(44.) Page 299, GENUS **PHALÆNOPTILUS** RIDGWAY.

Omit measurements from diagnosis, to which add the following:

*a*¹. Larger and darker, with prevailing color above grayish brown (more grayish on sides of pileum, scapulars, etc.) and relieved by broad irregularly sagittate or diamond-shaped spots on scapulars; chin and sides of head blackish; chest (next to white throat-patch) with black predominating, the sides and flanks more heavily barred with dusky; ochraceous of quills deeper, and more restricted; wing 5.50–6.15 (5.78), tail 3.40–3.80 (3.67). *Hab.* Western United States in general, excepting more southern plains, east of Rocky Mountains...... 418. **P. nuttalli** (AUD.). **Poor-will.**

*a*² Smaller and paler, with prevailing color above pale brownish gray, inclining in places to pale hoary or silvery whitish, relieved by smaller or narrower black markings; chin and sides of head finely mottled grayish brown; chest with little, if any, of uniform black; sides and flanks more narrowly barred (the latter sometimes immaculate); ochraceous of quills paler and more extended; wing 5.40–5.75 (5.44), tail 3.50–3.60 (3.52). *Hab.* Central Texas to Arizona (probably northward to Kansas, etc.). 418*a*. **P. nuttalli nitidus** BREWST. **Frosted Poor-will.**[3]

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[1] *Dryobates homorus* CABAN., Mus. Hein. iv. June 25, 1863, 65.—*Dryobates pubescens oreœcus* BATCHELD., Auk, vi. July, 1889, 253.

[2] *Melanerpes formicivorus aculeatus* MEARNS, Auk, vii. July, 1890, 249.

This form, which is very uniform in its characters throughout a very extensive territory, and therefore entitled to recognition, entirely replaces both *M. formicivorus* and *M. f. bairdi* in the region indicated above. The measurements and habitat of *M. f. bairdi* given on page 291 include the present form and require correction accordingly.

[3] *Phalænoptilus nuttalli nitidus* BREWST., Auk, iv. No. 2, April 1887, 147.

Note.—It is not improbable that the Californian birds of this species, at least those from the more humid and wooded northern coast districts, will have to be separated as a local race, characterized by very dark colors, with heavier markings. At least the two Californian examples in the National Museum collection (one from Nicasio, the other from Calaveras County) are altogether darker than any from elsewhere. Should additional material show the observed differences to be constant, I would propose for this dark northwestern race the name *P. nuttalli californicus*.

(45.) Page 301, **Chordeiles virginianus minor**:

The Florida bird has been separated as *C. virginianus chapmani*[1] by Mr. Sennett, and its range extended along the Gulf coast to Texas.

(46.) Pages 308 and 310–316, GENUS **TROCHILUS**:

The so-called subgenera, *Calypte* (p. 312, e^1), *Selasphorus* (p. 313, e^2), *Atthis* (p. 315, c^2), *Stellula* (p. 315, b^2), and *Calothorax* (p. 316, a^2) have been restored by the American Ornithologists' Union Committee on Classification and Nomenclature to the rank of genera, in accordance with the present author's views, as expressed in his popular monograph of the Hummingbirds (Annual Report of the United States National Museum for 1890, pages 253–383, plates i.–xliii.). The species should therefore be named as follows:

430. **Calypte costæ.**
431. **Calypte anna.**
Calypte helenæ.
432. **Selasphorus platycercus.**
433. **Selasphorus rufus.**
434. **Selasphorus alleni.**
431.1. **Selasphorus floresii.**
Atthis heloisæ.
Atthis ellioti.
436. **Stellula calliope.**
437. **Calothorax lucifer.**
Calothorax pulchra.

(47.) Page 312, after **T. alexandri**:

429.1. **Trochilus violajugulum** JEFFRIES. **Violet-throated Hummingbird.**[2] Somewhat like *T. alexandri* but larger, with the gorget much more extensively metallic and more reddish purple ("auricula purple") in color; tail much longer and more deeply forked, with the outermost feather relatively narrower and more pointed. (Female and young unknown.) Length (skin) 3.40, wing 1.85, tail 1.30 (middle rectrices 0.25 shorter, the lateral pair only 0.15 wide in middle). *Hab.* Southern California (Santa Barbara).

(48.) Page 338, after **C. richardsonii**:

462*a*. **Contopus richardsonii peninsulæ** BREWST.
Large-billed Wood Pewee.[3]

Similar to *C. richardsonii*, but smaller, with the bill larger, the upper parts slightly grayer, the yellowish tinge to the white of the throat and belly clearer, the pectoral band narrower and grayer, and light edgings of the tertials and greater wing-coverts broader and whiter. *Hab.* Southern Lower California.

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[1] [*Chordeiles popetue*] *chapmani* (SENNETT, MS.) COUES, Auk, v. Jan. 1888, 37.—*Chordeiles virginianus chapmani* SCOTT, Auk, v. April, 1888, 186.

[2] *Trochilus violajugulum* JEFFRIES, Auk, v. April, 1888, 168.

[3] *Contopus richardsonii peninsulæ* BREWST., Seven Sup. New N. Am. B. Feb. 17, 1891, 144; Auk, viii. April, 1891, 144.

(49.) Page 340, after **E. difficilis:**

464.1. **Empidonax cineritius** Brewst. **St. Lucas Flycatcher.**[1]

"Most nearly like *E. difficilis* but with the general coloring much duller, the upper parts with scarcely a tinge of greenish, no decided yellow beneath, excepting on jugulum and abdomen; wing-bands brownish white." *Hab.* Lower California and northwestern Mexico, south to Mazatlan.

(50.) Page 344, after **E. wrightii:**

469.1. **Empidonax griseus** Brewst. **Gray Flycatcher.**[2]

"Nearest *E. obscurus* [i.e. *E. wrightii*], but larger and much grayer, the bill longer, the basal half of the lower mandible flesh-colored in strong contrast to the blackish terminal half." *Hab.* Lower California and western and central Mexico; southern Arizona?

(51.) Page 349, after **O. alpestris chrysolæma:**

474*h*. **Otocoris alpestris adusta** Dwight. **Scorched Horned Lark.**[3]

"Similar to *chrysolæma*, but of a uniform scorched pink or vinaceous-cinnamon above." *Hab.* Southern Arizona and New Mexico, western Texas, and southward into Mexico.

(52.) Page 349, after **O. alpestris rubea:**

d^3. Smallest and most pallid of all the forms of *O. alpestris;* wing of male averaging 3.74, tail 2.52, tarsus .77, bill from nostril .36; coloration most like that of *O. a. arenicola* but decidedly paler. *Hab.* Shores of the Gulf of California........................ 474*j*. **Otocoris alpestris pallida** Towns. **Sonoran Horned Lark.**[4]

(53.) Page 349, after **O. alpestris strigata:**

—. **Otocoris alpestris insularis** Towns. **Island Horned Lark.**[5]

Similar to *O. a. strigata*, but without yellow tinge on under parts; much darker than *O. a. chrysolæma*, with streaks on back more distinctly contrasted and sharply defined, and lateral under parts much darker. *Hab.* Islands of San Nicolas, San Clemente, Santa Cruz, and Santa Rosa, southern California (resident).

474*i*. **Otocoris alpestris merrilli** Dwight. **Dusky Horned Lark.**[6]

"Larger, more broadly streaked above, and blacker than *strigata*, with less yellow about the head and throat, the nape pinker." *Hab.* "Eastern Oregon, Washington, and British Columbia, between the Cascades and Rocky Mountains; southward, in winter, into Nevada and California."

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[1] *Empidonax cineritius* Brewst., Auk, v. Jan. 1888, 90.

[2] *Empidonax griseus* Brewst., Descr. Sup. New Birds from W. N. Am. and Mex. Jan. 31, 1889, 87; Auk, vi. April, 1889, 87.—*Empidonax canescens* Salv. & Godm., Biol. Centr.-Am. Aves, ii. pt. 10, Feb. 1889, 79.

[3] *Otocoris alpestris adusta* Dwight, Auk, vii. April, 1890, 148.

[4] *Otocoris alpestris pallida* "Townsend, MS.," Dwight, Auk, vii. April, 1890, 154.

[5] *Otocoris alpestris insularis* Towns., Proc. U. S. Nat. Mus. xiii. 1890, 140.

[6] *Otocoris alpestris merrilli* Dwight, Auk, vii. April, 1890, 153.

(54.) Page 356, after **A. californica**:

481*b*. **Aphelocoma californica obscura** Anthony. **Belding's Jay.**[1] Similar to *A. californica*, but rather smaller and decidedly darker, the back dark drab or brownish slate, the under parts more decidedly grayish and under tail-coverts more strongly tinged with blue. *Hab.* San Pedro Mountains, Lower California.

(55.) Page 366, **Dolichonyx oryzivorus albinucha**:

This supposed form is probably not valid, having been based upon breeding males in which the color of the hind-neck, etc., was bleached.

(56.) Page 367, Genus **MOLOTHRUS** Swainson.

Section a^2, including *M. æneus* (Wagl.), should constitute a distinct genus, **Callothrus** Cassin (Pr. Ac. Nat. Sci. Phil. 1866, 18, type, *Psarocolius æneus* Wagl.), the characters of which are as follows:—Feathers of hind-part and sides of neck in the adult male much elongated, forming a very conspicuous, soft, and dense erectile ruff; four outer primaries with inner webs curiously sinuated and emarginated, the web being expanded just beyond the middle portion, the posterior extremity of the widened part forming an acute point, projected longitudinally (less marked on the first quill). Two apparently distinct species constitute the genus, their distinctive characters being much more obvious in the females than in the males. They may be thus characterized:

b^1. Bill decidedly stouter; *adult female* grayish brown (washed with plumbeous in fresh plumage), lighter below, the feathers of back, etc., darker medially, producing more or less conspicuous streaks; *adult male* brighter colored, with the bronze of head, neck, etc., more greenish (scarcely, if at all, duller on top of head than on back), and rump distinctly purple or violet. *Hab.* Western Mexico (Mazatlan, Manzanillo Bay, Colima, etc.).

C. æneus (Wagl.). **Bronzed Cowbird.**

b^2. Bill more slender; *adult female* dull black, more or less glossed with bluish or purple, especially on wings and tail; *adult male* duller in color, with bronze less greenish (decidedly duller on top of head than on back), and with rump dull bronzy scarcely, if at all, mixed or tinged with purplish or violet. *Hab.* Eastern and southern Mexico, Yucatan, and south to Panama; north to lower Rio Grande Valley in Texas.

496. **C. robustus** (Cab.). **Red-eyed Cowbird.**[2]

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[1] *Aphelocoma californica obscura* Anthony, Proc. Cal. Ac. Sci. 2d ser. ii. Oct. 11, 1889, 75.

[2] *Molothrus robustus* Cab., Mus. Hein. i. Sept. 1851, 193, foot-note (Mexico).

This is based on the adult female of the eastern bird. The description of *Psarocolius æneus* Wagl. agrees minutely with the adult male of the western form; and therefore, while the locality given is simply "Mexico," I have preferred to restrict the name as above, rather than give a new name to the western species, which would be the necessary alternative. The two species are essentially identical in all measurements except of the bill, which is considerably stouter in *C. æneus*.

(57.) Page 387, under **C. vespertina:**

C. vespertinus, as described on page 387, comprises two forms, which can be distinguished with certainty only when females are compared. They differ as follows:

c^1. Adult female with prevailing color ashy, or only slightly brownish, gray. *Hab.* Interior of British America, southward, in winter, to the upper Mississippi Valley and basin of the Great Lakes.

514. **C. vespertinus** (COOPER). **Evening Grosbeak.**

c^2. Adult female with prevailing color buffy or yellowish brown. *Hab.* Western United States and highlands of Mexico, from British Columbia (coast district) to Vera Cruz.

514*a*. **C. vespertinus montanus** (RIDGW.). **Western Evening Grosbeak.**[1]

(58.) Page 398, **S. tristis:**

This includes two forms, the southwestern of which has been separated as

529*a*. **Spinus tristis pallidus** MEARNS. **Western Goldfinch.**[2]

Similar to *S. tristis*, but larger and paler; male in full plumage with black cap more extended, the yellow paler, and the white markings of wings and tail more extended; winter plumage with coloration much lighter than the corresponding dress of *S. tristis*, with tints purer and white more extended. *Hab.* Arizona (perhaps whole of the arid region).

(59.) Page 407, after **P. gramineus confinis:**

540*b*. **Poocætes gramineus affinis** MILLER. **Oregon Vesper Sparrow.**[3]

"Similar to *Poocætes gramineus confinis* BAIRD in respect to the slender bill and narrow dark dorsal streakings, but differing in being smaller and having the ground color above buffy brown rather than grayish brown. All the lighter areas of the plumage (including crissum, under wing-coverts and lining of wings) suffused with pinkish buff.

"Dimensions (average of eight adults): wing, 3.04; tail, 2.46; tarsus, 0.79; culmen, 0.46; bill from nostril, 0.31 inch.

"*Hab.* Western Oregon."

(60.) Page 412, after **A. henslowii:**

547*a*. **Ammodramus henslowii occidentalis** BREWST.
Western Henslow's Sparrow.[4]

"Similar to *A. henslowii* but the general coloring paler above and whiter beneath, the back and scapulars with broader black streaking and much less chestnut, the wings and tail grayer." *Hab.* "Dakota—and probably other regions along the eastern border of the Great Plains."

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[1] *Hesperiphona vespertina*, var. *montana* RIDGWAY, in Hist. N. Am. B. i. 1874, 449.—*Coccothraustes vespertina montana* MEARNS, Auk, vii. July, 1890, 246.

[2] *Spinus tristis pallidus* MEARNS, Auk, vii. July, 1890, 244.

[3] *Poocætes gramineus affinis* MILLER, Auk, v. Oct. 1888, 404.

[4] *Ammodramus henslowii occidentalis* BREWST., Descr. Seven Sup. New N. Am. B. Feb. 17, 1891, 145; Auk, viii. April, 1891, 145.

(61.) Page 413, **A. caudacutus:**

This includes two forms, of which one is to be separated as

549*b*. **Ammodramus caudacutus subvirgatus** Dwight.
Acadian Sharp-tailed Finch.[1]

"Similar in size and coloring to *A. caudacutus*, but paler and much less conspicuously streaked beneath with pale greenish gray instead of black or deep brown. Bill averages smaller. Compared with *nelsoni*, it is much paler and grayer, generally larger and with a longer bill." *Hab.* "Marshes of southern New Brunswick, Prince Edward Island, and probably Nova Scotia, and southward in migration along the Atlantic coast" to South Carolina.

(62.) Page 413, **A. maritimus:**

This includes four local forms, of which *A. maritimus* proper is restricted to the Atlantic coast (Massachusetts to northern Florida). The three which are to be separated are as follows:

550*a*. **Ammodramus maritimus peninsulæ** Allen.
Scott's Seaside Sparrow.[2]

Smaller and darker than *A. maritimus*, paler than *A. nigrescens;* back distinctly striped with brownish black, chest and sides distinctly streaked with dusky and more or less strongly ashy. *Hab.* West coast of Florida (Cedar Keys, Tarpon Springs, etc.).

550*b*. **Ammodramus maritimus sennetti** Allen.
Texas Seaside Sparrow.[3]

Smaller and much paler than *A. maritimus*, with sides of hinder head (post-auricular region, etc.) distinctly buffy, also the chest; above conspicuously light-streaked; beneath narrowly but distinctly streaked across chest and along sides. *Hab.* Coast of Texas.

—. **Ammodramus maritimus macgillivrayi** (Aud.).
Louisiana Seaside Sparrow.[4]

Similar to *A. m. peninsulæ*, but still darker, with dusky streaks on back broader and blacker, and margined externally (except along median line) with broad streaks of pale ash-gray or grayish white; pileum and hind-neck more strongly tinged with brown; post-auricular space and chest strongly tinged with buff (sometimes wholly deep buff), the latter distinctly streaked with black or grayish dusky. *Hab.* Coast of Louisiana; coast of Texas (Corpus Christi, etc.) during migration.

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[1] *Ammodramus caudacutus subvirgatus* Dwight, Auk, iv. July, 1887, 233.

[2] *Ammodramus maritimus peninsulæ* Allen, Auk, v. July, 1888, 284 (part).

[3] *Ammodramus maritimus sennetti* Allen, Auk, v. July, 1888, 286.

[4] *Fringilla macgillivrayi* Aud., Orn. Biog. ii. 1834, 285.—*Ammodramus macgillivrayi* Aud., Birds Am. oct. ed. iii. 1841, 106, pl. 173.

(63.) Page 423, after **J. caniceps**:

568.1. **Junco ridgwayi** MEARNS. **Ridgway's Junco.**[1]

Similar to *J. caniceps*, but with sides and flanks pinkish vinaceous, as in *J. annectens*. *Hab.* "Wyoming, Arizona, and New Mexico." (Breeding specimens are from Fort Bridger, Wyoming, and the form probably breeds in the Uintah Mountains.)

(64.) Page 424, **J. hyemalis oregonus**:

As here given, this name covers four more or less distinct forms. The true *J. h. oregonus*, which is restricted during the breeding season to the narrow coast district from northern California to Alaska, but which in winter migrates as far southward and eastward as Arizona, is much the darkest in color, the adult male having the head and neck deep black and the back deep chestnut or chestnut-brown. The other forms differ as follows:

567*b*. **Junco hyemalis shufeldti** COALE. **Shufeldt's Junco.**[2]

Similar to *J. h. oregonus*, but head and neck dull slate-color instead of black, back dull brown instead of chestnut-brown, and sides duller vinaceous. *Hab.* Interior districts of western North America, extensively diffused during migrations (east, occasionally, to Atlantic coast), breeding from Montana, etc., northward.

567*c*. **Junco hyemalis thurberi** ANTHONY. **Thurber's Junco.**[3]

Similar to *J. h. oregonus*, but smaller, back lighter, more cinnamomeous, more sharply defined against black of head and neck, sides and flanks paler and less extensively pinkish. *Hab.* Mountains of California in summer.

576*d*. **Junco hyemalis pinosus** LOOMIS. **Point Pinos Junco.**[4]

Similar to *J. h. thurberi*, but adult male with the chin, throat, chest, and upper breast dull slate-color or blackish slate instead of black, bill longer, and general dimensions somewhat less. Young much more strongly tinged with buff beneath. *Hab.* Vicinity of Monterey, California.

(65.) Page 424, after **J. annectens**:

571.1. **Junco townsendi** ANTHONY. **Townsend's Junco.**[5]

Similar to *J. annectens*, but smaller, head, neck, and chest darker gray, back less distinctly brown, and sides less extensively pinkish. *Hab.* San Pedro Mountains, Lower California.

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[1] *Junco ridgwayi* MEARNS, Auk, vii. July, 1890, 243.

[2] *Junco hyemalis shufeldti* COALE, Auk, iv. Oct. 1887, 330.

[3] *Junco hyemalis thurberi* ANTHONY, Zoe, i. Oct. 1890, 238.

[4] *Junco pinosus* LOOMIS, Auk, x. April, 1893, 47.—*Junco hyemalis pinosus* A. O. U. COM., Auk, xi. Jan. 1894, 47.

[5] *Junco townsendi* ANTHONY, Proc. Cal. Ac. Sci. 2d ser. ii. Oct. 11, 1889, 76.

(66.) Page 427, after **A. belli nevadensis**:

*c*³. Above very light grayish brown, much paler even than in *A. b. nevadensis;* back unstreaked and size smaller than *A. belli.* *Hab.* Ballaenas Bay, Lower California......... **A. belli cinerea** TOWNS. **Gray Sage Sparrow.**[1]

(67.) Page 431, after **M. fasciata montana**:

582*h*. **Melospiza fasciata graminea** TOWNS. **Santa Barbara Song Sparrow.**[2] About the size of *M. f. samuelis*, but with shorter tail and larger feet, and decided grayish coloration above, with the dark streaks, both above and below, narrower and more conspicuously contrasted with the ground-color. *Hab.* Santa Barbara Island, California.

582*i*. **Melospiza fasciata clementæ** TOWNS. **San Clemente Song Sparrow.**[3] Similar in color to *M. f. graminea*, but much larger, the bill conspicuously longer. *Hab.* San Clemente and Santa Rosa Islands, California.

(68.) Page 432, after **M. fasciata fallax**:

581*g*. **Melospiza fasciata rivularis** BRYANT. **Brown's Song Sparrow.**[4] Similar to *M. f. fallax*, but larger, with more compressed bill, still less strongly contrasted markings, and duller, less rufescent, colors. Wing 2.65–2.87, tail 2.65–2.90, exposed culmen .48–.53, tarsus .88–.91, middle toe .62–.66. *Hab.* Mountain districts of southern Lower California.

(69.) Page 432, after "*c*²":

Melospiza cinerea includes two forms, which are to be distinguished as follows:

*d*¹. Larger, with relatively shorter but stouter bill; sides of neck at termination of the submalar streak spotted with russet; crown with broad lateral stripes of russet; spots on back, chest, etc., more distinct and browner in color. *Hab.* Aleutian Islands, from Unalashka westward.
582. **M. cinerea** (GMEL.). **Aleutian Song Sparrow.**

*d*². Smaller, with relatively longer and more slender bill; sides of neck at termination of submalar streak not distinctly, if at all, spotted with brown; crown without lateral stripes of russet; spots on back, chest, etc., grayer and less distinct. *Hab.* Kadiak Island, Alaska.
582.1. **M. insignis** BAIRD. **Kadiak Song Sparrow.**[5]

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[1] *Amphispiza belli cinerea* TOWNS., Proc. U. S. Nat. Mus. xiii. 1890, 136.

[2] *Melospiza fasciata graminea* TOWNS., Proc. U. S. Nat. Mus. xiii. 1890, 139.

[3] *Melospiza fasciata clementæ* TOWNS., Proc. U. S. Nat. Mus. xiii. 1890, 139.

[4] *Melospiza fasciata rivularis* BRYANT, Proc. Cal. Acad. Sci. 2d ser. i. Sept. 29, 1888, 197.

[5] *Melospiza insignis* BAIRD, Trans. Chicago Ac. Sci. i. 1869, 319, pl. 29, fig. 2. (*Cf.* RICHMOND, Auk, xii. 1895, 144–150.)

(70.) Page 433, after **M. lincolni:**

583*a*. **Melospiza lincolni striata** Brewst. **Forbush's Sparrow.**[1]

"Similar to *M. lincolni*, but with the superciliary stripe and entire upper parts more strongly olivaceous, and the dark streaks, especially on the pileum, back, and upper tail-coverts, coarser, blacker, and more numerous." *Hab.* Coast district of British Columbia.

(71.) Page 434, Genus **ARREMONOPS.**

New genus: Type, *Embernagra rufivirgata* Lawr.

The Mexican and Central American species usually referred to the genus *Embernagra* Less. are so different in structural and other characters from the type of the latter (*Emberiza platensis* Gmel.) that only a moment's comparison is necessary to demonstrate their generic distinctness. The name chosen for the new genus is selected on account of the very close affinity of the birds in question to those of the genus *Arremon* Vieill. (usually placed among the Tanagers). In fact, I have found it difficult to discover reasons for separating them generically from the latter.

(72.) Page 439, **Pipilo chlorurus (= Oreospiza chlorura):**

This bird, which has been referred by different authors to the genera "*Embernagra*" (i.e. *Arremonops*) and *Atlapetes*, but which is really far more out of place in either than in *Pipilo*, I propose to make the type of a new genus, *Oreospiza*, whose characters are intermediate between, or rather a combination of, those of *Pipilo* and *Zonotrichia.*

(73.) Page 441, after **P. fuscus crissalis:**

591*c*. **Pipilo fuscus senicula** Anthony. **San Fernando Towhee.**[2]

"Differing from *crissalis* in smaller size, much less rusty on lower parts, upper parts darker, and lower more grayish." *Hab.* "Southern California, and Lower California as far south as 29° at least."

(74.) Page 442, under **C. cardinalis:**

593*c*. **Cardinalis cardinalis canicaudus** Chapm. **Gray-tailed Cardinal.**[3]

"Male similar to the male of *Cardinalis cardinalis*, but with a less conspicuous black frontlet; female averaging grayer than the female of *Cardinalis cardinalis*, and with the tail-feathers broadly margined with gray instead of being narrowly edged with olivaceous-brown." *Hab.* "Southwestern Texas, south into northeastern Mexico."

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[1] *Melospiza lincolni striata* Brewst., Descr. Sup. New Birds from W. N. Am. and Mex. Jan. 31, 1889, 89; Auk, vi. April, 1889, 89.

[2] *Pipilo fuscus senicula* Anthony, Auk, xii. April, 1895, 111.

[3] *Cardinalis cardinalis canicaudus* Chapm., Bull. Am. Mus. N. H. iii. No. 2, Aug. 27, 1891, 324.

593*d.* **Cardinalis cardinalis floridanus** Ridgw. (new subspecies). **Florida Cardinal.**

Smaller and darker colored than *C. cardinalis;* adult male with the terminal margins of feathers of back, etc., olivaceous instead of gray; adult female with more red in crest and on tail, the chest frequently much tinged or intermixed with red. *Hab.* Florida.

(Type, No. 54986, ♀ad., U. S. Nat. Mus., Enterprise, Florida; G. A. Boardman.)

(75.) Page 444, **P. sinuata:**

Restrict range of *P. sinuata* to Texas and northeastern Mexico and add the following forms:

594*a.* **Pyrrhuloxia sinuata beckhami** Ridgw. **Arizona Pyrrhuloxia.**[1]

Differing from *P. sinuata* in decidedly browner and somewhat lighter tone of the gray, and greater extent of dark red on the tail; adult male without blackish suffusion or admixture in the lighter carmine-red of the capistrum, and red of the crest much lighter; female with much less of a grayish tinge across chest and along sides; wing (♂) 3.60–3.90, tail 4.40–4.60, depth of bill .50–.52. *Hab.* Southern Arizona and New Mexico and contiguous portion of northern Mexico.

594*b.* **Pyrrhuloxia sinuata peninsulæ** Ridgw. **St. Lucas Pyrrhuloxia.**[2]

Similar to *P. s. beckhami* in color, but decidedly smaller, with larger bill; wing (♂) 3.30–3.60, tail 3.80–4.15, depth of bill .52–.55. *Hab.* Southern Lower California.

(76.) Page 453, Genus **PIRANGA** Vieillot:

Add *P. rubriceps* Gray (*Pyranga rubriceps* Gray, Gen. B. ii. 364, pl. 89), which is said to have been taken in California (Dos Pueblos, Santa Barbara County, *cf.* Walter E. Bryant, Auk, Jan. 1887, p. 78). This species belongs in section a^1, although the wing is bicolored, the lesser and middle coverts being pure gamboge-yellow, while the greater and primary coverts, alula, and remiges are dull black, edged, more or less, with olive-green. The adult male has the entire head and upper part of neck (sometimes whole neck and chest) bright red, the back and scapulars olive-green changing to olive-yellow on rump and upper tail-coverts, the tail olive-dusky edged with olive-green, and the lower parts rich yellow; wing 3.60–3.75, tail 3.40–3.50. The adult female probably lacks the red of the head and neck, although said to be "like the male, but the scarlet color of the head only extending to the nape and throat" (Sclater, Cat. B. Brit. Mus. xi. 1886, 192). The occurrence of this species in California can only be considered as purely accidental, its habitat being Colombia and Ecuador, entirely south of the Isthmus of Panama.

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[1] *Pyrrhuloxia sinuata beckhami* Ridgw., Auk, iv. Oct. 1887, 347.

[2] *Pyrrhuloxia sinuata peninsulæ* Ridgw., Auk, iv. Oct. 1887, 347.

(77.) Page 459, after **P. subis**:

611*a*. **Progne subis hesperia** Brewst. **Western Martin.**[1]

"Female differing from female *subis* in having the abdomen, anal region, crissum, and under tail-coverts pure white, nearly or quite immaculate, the throat, breast, flanks, forehead, fore part of crown, and nuchal collar grayish white, the feathers of the back and rump conspicuously edged with grayish or pale brown, the bend of the wing and the under wing-coverts mottled profusely with whitish. Male indistinguishable from the male of *subis*. *Hab.* Southern California and Lower California.

(78.) Page 470: In Természetrajzi Füzetek, vol. ix. part 1, 1885, p. 85, Von Madarász has described a new *Vireo* (*V. forreri*) from the Tres Marias Islands. It is said to resemble most nearly *V. flavoviridis* (Cass.), from which it differs chiefly in absence of the superciliary stripe and dark streak on sides of crown, the latter lighter gray, and the breast tinged with grayish.

(79.) Page 473, under **V. solitarius cassinii**:

629*d*. **Vireo solitarius lucasanus** Brewst. **St. Lucas Solitary Vireo.**[2]

"Smaller than *V. s. cassinii*, but with the bill (actually as well as relatively) longer and stouter, the sides and flanks much yellower. Young in autumn without brownish beneath and closely resembling the young of *solitarius*." *Hab.* Lower California.

(80.) Page 477, under **V. huttoni**:

632*b*. **Vireo huttoni obscurus** Anthony. **Dusky Vireo.**[3]

Similar to *V. huttoni*, but darker, and averaging slightly smaller. *Hab.* Pacific coast, from Oregon to Vancouver Island and mainland of British Columbia, south to California in winter.

(81.) Page 489, under **H. celata lutescens**:

646*b*. **Helminthophila celata sordida** Towns. **Dusky Warbler.**[4]

Similar to *H. c. lutescens*, but decidedly darker; bill and feet larger, wing shorter. *Hab.* San Clemente Island, California (resident).

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[1] *Progne subis hesperia* Brewst., Descr. Sup. New B. from W. N. Am. and Mex. Jan. 31, 1889, 92; Auk, vi. April, 1889, 92.

[2] *Vireo solitarius lucasanus* Brewst., Descr. Seven Sup. New N. Am. B. Feb. 17, 1891, 147; Auk, viii. April, 1891, 147.

[3] *Vireo huttoni obscurus* Anthony, Zoe, Dec. 1890, 307.—*Vireo huttoni insularis* Rhoads, Auk, x. July, 1893, 239.

[4] *Helminthophila celata sordida* Towns., Proc. U. S. Nat. Mus. xiii. 1890, 139.

(82.) Page 494, after **D. æstiva morcomi**:

652*a*. **Dendroica æstiva sonorana** Brewst. **Sonora Yellow Warbler.**[1]

"♂ most nearly like *D. æ. morcomi*, but with the under parts even more faintly and sparsely streaked, the upper parts, especially the rump, wings, and tail, much yellower, the light (yellowish) edging of wing-quills and coverts broader, the interscapulars with more or less conspicuous shaft-stripes of purplish chestnut; ♀ much paler and grayer than the ♀ of either *æstiva* or *morcomi*." *Hab.* "Southern Arizona, western Texas, and Sonora, Mexico."

(83.) Page 508, **D. chrysoparia**:

On page 508 it is stated that the female of this species "has not been described." This is an error, for the following description occurs in volume x. of the "Catalogue of Birds in the British Museum" (pp. 295, 296), by R. Bowdler Sharpe:

"*Adult female.* Differs from the male in being olive-yellow above, slightly mottled with blackish centres on the crown, lower back, and rump; upper tail-coverts ashy gray, with black centres; scapulars uniform ashy gray; wings as in the male, with two white wing-bars, the median series very broadly tipped with white, the ashy margins to the quills broader than in the male; tail as in the male; a broad eyebrow and entire sides of face golden yellow, the black line through the eye dusky blackish; base of cheeks and feathers below the eye whitish, as also the base of the chin; breast and abdomen white, and streaked with black on the flanks as in the male; the throat yellow, the lower part and fore-neck ashy whitish, overshading the black throat, which can be traced below; axillaries and under wing-coverts white; quills dusky below, white along the edge of the inner web. Total length 4.5 inches, culmen 0.5, wing 2.5, tail 2.05, tarsus 0.75 (*Mus. Salvin and Godman*)."

(84.) Page 523, under **G. trichas**:

681*b*. **Geothlypis trichas ignota** Chapm. **Florida Yellow-throat.**[2]

"Similar to *Geothlypis trichas* (Linn.), but with longer tarsus, tail, and bill; yellow of under parts of a deeper shade and greater extent; flanks of a much darker color; the under parts browner; the facial mask wider, with its ashy border (in summer specimens) slightly paler and of greater extent. First primary shorter, equalling the eighth instead of the sixth, as in *Geothlypis trichas*." *Hab.* Florida and southern Georgia.

(85.) Page 526, after **G. poliocephala**:

682.1. **Geothlypis poliocephala ralphi** Ridgw. **Rio Grande Yellow-throat.**[3]

Similar to *G. poliocephala*, but larger (the bill especially), upper parts grayer (tail particularly), and the edge of the wing and the under tail-coverts much paler yellow. *Hab.* Lower Rio Grande Valley.

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[1] *Dendroica æstiva sonorana* Brewst., Auk, v. April, 1888, 137.

[2] *Geothlypis trichas ignota* Chapm., Auk, vii. Jan. 1890, 11.

[3] *Geothlypis poliocephala ralphi* Ridgw., Proc. U. S. Nat. Mus. xvi. No. 964, Feb. 5, 1893, 692.

(86.) Page 544, after **H. cinereus:**

709*a*. **Harporhynchus cinereus mearnsi** ANTHONY. **Mearns's Thrasher.**[1]

Similar to *H. cinereus*, but much darker and browner above, with rump and upper tail-coverts decidedly rufescent; spots on lower parts much larger and blacker; white spots on tips of rectrices smaller; flanks, anal region, and under tail-coverts much deeper buffy; bill less curved. *Hab.* Western Lower California (San Quentin to San Fernando).

(87.) Page 547, after **H. affinis:**

713*a*. **Heleodytes brunneicapillus bryanti** ANTHONY. **Bryant's Cactus Wren.**[2]

"Differing from *affinis* in very much heavier spotting of lower parts, the black predominating, in extreme specimens, on the throat and upper breast, and in its perfectly barred tail and slight wash of rufous on belly and flanks; from *brunneicapillus* by heavier spotting, especially on sides and belly, in having intermediate rectrices more or less perfectly barred, and in much less rusty wash on lower parts." *Hab.* Western Lower California (north to San Diego?).

(88.) Page 550, after **T. ludovicianus:**

718*b*. **Thryothorus ludovicianus lomitensis** SENNETT. **Lomita Wren.**[3]

Similar to *T. ludovicianus*, but much less rufescent above, rump with larger white spots, upper tail-coverts more distinctly barred, tail paler and mottled rather than barred; sides and flanks usually barred with brown; averaging smaller than *T. ludovicianus*, with the bill more slender. *Hab.* Lower Rio Grande Valley (Texas side).

(89.) Page 551, under **T. bewickii spilurus:**

719.1. **Thryothorus leucophrys** ANTHONY. **San Clemente Wren.**[4]

Similar to *T. bewickii spilurus*, but much grayer above, with a much broader and whiter superciliary stripe, less heavily barred under tail-coverts, and longer bill. *Hab.* San Clemente Island, California.

(90.) Pages 553, 554, **T. aëdon parkmanii:**

This includes two forms, supposed to be distinguished as follows:

*f*¹. Browner. *Hab.* Pacific coast district.

721*a*. **T. aëdon parkmanii** (AUD.). **Parkman's Wren.**

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[1] *Harporhynchus cinereus mearnsi* ANTHONY, Auk, xii. Jan. 1895, 53.

[2] *Heleodytes brunneicapillus bryanti* ANTHONY, Auk, xi. July, 1894, 212.

[3] *Thryothorus ludovicianus lomitensis* SENN., Auk, vii. Jan. 1890, 58.

(NOTE.—The range of *T. ludovicianus* to be emended by eliminating "including northeastern Mexico," etc., which pertains to *T. l. berlandieri*, a well-marked race, which differs from *T. l. lomitensis* in richer coloration, the under parts being bright tawny-buff.)

[4] *Thryothorus leucophrys* ANTHONY, Auk, xii. Jan. 1895, 52.

f^2. Grayer. *Hab.* Interior districts, east to Mississippi Valley (Minnesota, Illinois, etc.), south over table-lands of Mexico.

721*b*. **T. aëdon aztecus** Baird. **Aztec Wren.**

(**91.**) Page 556, after **C. palustris paludicola:**

725*b*. **Cistothorus palustris marianæ** (Scott). **Marian's Marsh Wren.**[1]

Somewhat like *C. palustris*, but smaller and much more olivaceous in color, with rump, tail-coverts, and flanks barred with dusky; superciliary stripe much less distinct (broken by conspicuous black streaking), the breast sometimes barred or speckled with dusky. *Hab.* Salt marshes of western Florida (Tarpon Springs, etc.).

725*c*. **Cistothorus palustris griseus** Brewst. **Worthington's Marsh Wren.**[2]

"Of the size and proportions of *C. marianæ*, but with less black above and no distinct dark markings on the under tail-coverts, flanks, sides, or breast. General coloring very much paler and grayer than in either *marianæ* or *palustris*. Bill colored as in *C. marianæ*." *Hab.* Coast of South Carolina to northern Florida (Anastasia Island).

(**92.**) Page 559, after **S. carolinensis:**

727*b*. **Sitta carolinensis atkinsi** Scott. **Florida White-breasted Nuthatch.**[3]

Smaller than *S. carolinensis*. "Bill relatively much longer and slenderer. Light markings of tipping of the coverts and quills of the wings decidedly narrower. A little less white in the tail. In the female bird the *black* of the top of the head and nape is *pronounced*, and it is difficult to distinguish the sexes easily, and in some cases impossible, by the color of these parts." *Hab.* Florida.

(**93.**) Page 560, after **S. pygmæa:**

730*a*. **Sitta pygmæa leuconucha** Anthony. **White-naped Nuthatch.**[4]

Similar to *S. pygmæa*, but bill much larger, pileum much grayer, back less bluish gray, white nuchal patch much more conspicuous, and under parts white, with scarcely more than a trace of buffy tinge. *Hab.* San Pedro Mountains, Lower California.

(**94.**) Page 562, after **P. carolinensis:**

736*a*. **Parus carolinensis agilis** Senn. **Plumbeous Chickadee.**[5]

Similar to *P. carolinensis*, but upper parts much lighter and purer gray, lower parts whiter, and whitish edging to outer tail-feathers much broader and more distinct. *Hab.* "Texas (Bee, Victoria, and Concho Counties)."

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[1] *Cistothorus marianæ* Scott, Auk, v. April, 1888, 188.—*Cistothorus palustris marianæ* Brewst., Auk, x. July, 1893, 218.

[2] *Cistothorus palustris griseus* Brewst., Auk, x. July, 1893, 216.

[3] *Sitta carolinensis atkinsi* Scott, Auk, vii. April, 1890, 118.

[4] *Sitta pygmæa leuconucha* Anthony, Proc. Cal. Acad. Sci. 2d ser. ii. Oct. 11, 1889, 77.

[5] *Parus carolinensis agilis* Senn., Auk, v. Jan. 1888, 46.

(95.) Page 564, **P. hudsonicus.** This includes two additional forms, as follows:

740*a*. **Parus hudsonicus stoneyi** Ridgw. **Kowak Chickadee.**[1]

Similar to *P. hudsonicus*, but much grayer above, sides of neck purer ash-gray, sides much paler rusty, and throat clear slate-black instead of sooty blackish; wing 2.55–2.75 (2.62), tail 2.60–2.65, (2.62), exposed culmen .30–.35 (.32), tarsus .62–.70. *Hab.* Kowak River, Alaska.

740*b*. **Parus hudsonicus columbianus** Rhoads. **Columbian Chickadee.**[2]

Larger than *P. hudsonicus* (wing averaging 2.70, tail 2.64). "Colors much darker throughout. Black of throat jet, without sooty suffusion, its posterior border abruptly defined and lacking invasion of white tips seen in *hudsonicus*. Bill black, lacking any tinge of brown. Brownish loral area of *hudsonicus* replaced by sooty black and connected by a distinct frontal band of same color. Crown and hind neck slaty drab with brownish tinge obsolete or barely perceptible. Back, rump, and tail-coverts grayish brown as in *hudsonicus*. Wings and tail darker slate gray, the former without the brownish or grayish tips always (?) present in *hudsonicus* and *stoneyi* (?). Sides and flanks chocolate (nearly blackish) brown." *Hab.* "Rocky Mountains, from the Liard River south into Montana."

(96.) Page 565, after **P. plumbeus:**

744.1. **Psaltriparus santaritæ** Ridgw. **Santa Rita Bush-Tit.**[3]

Similar to *P. plumbeus* Baird, but decidedly smaller, with sides of head paler, and male with a more or less distinct blackish line or streak along sides of occiput (immediately above auriculars), as in the female of *P. lloydi* Sennett. *Hab.* Santa Rita Mountains, southern Arizona.

(97.) Page 565, under **Psaltriparus melanotis:**

745. **Psaltriparus lloydi** Senn. **Lloyd's Bush-Tit.**[4]

Similar to *P. melanotis*, but much grayer, the back, scapulars, and rump ash-gray instead of brown, and the under parts white, tinged with vinaceous on flanks, instead of having only the chin and throat white. *Hab.* "Mountains of western Texas, between the Pecos and the Rio Grande."

P. melanotis iulus Jouy (Proc. U. S. Nat. Mus. xvi. 1894, 776), from the Sierra Madre of Mexico (Jalisco to Chihuahua), is intermediate in coloration between *P. melanotis* and *P. lloydii*, but nearer the former, the back being grayish brown instead of ash-gray (as in *P. lloydi*) or yellowish bistre-brown (as in *P. melanotis*).

P. melanotis does not occur within our limits.

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[1] *Parus stoneyi* Ridgw., Man. N. Am. B. 1887, 591.—*Parus hudsonicus stoneyi* Ridgw., in Suppl. to Code of Nom. and Check List, A. O. U. 1889, 17.

[2] *Parus hudsonicus columbianus* Rhoads, Auk, x. Jan. 1893, 23.

[3] *Psaltriparus santaritæ* Ridgw., Proc. U. S. Nat. Mus. x. Oct. 12, 1887, 697.

[4] *Psaltriparus lloydi* Senn., Auk, v. Jan. 1888, 43.

(98.) Page 568, after **Regulus satrapa olivaceus**:

An adult male of *R. satrapa* from the city of Mexico in Mr. Lawrence's collection is much deeper and richer colored than even Pacific coast examples, and no doubt represents a race resident on the high mountains of central Mexico, which Mr. Lawrence has named, in manuscript, *Regulus satrapa aztecus.* The lower parts are light grayish brown, or drab, the underlying portion of the plumage pale dull buffy; the white superciliary stripe (tinged with brownish anteriorly) is much more conspicuous than usual, owing to contrast with the very dark color of adjacent portions of sides of head and brownish lower parts; the secondaries and rectrices are edged with very bright yellowish olive-green, while the back, scapulars, and rump are a rather dull olive-green, changing to dull sooty grayish on the hind-neck. Wing 2.25, tail 1.70.

(99.) Page 569, after **P. cærulea**:

751*a*. **Polioptila cærulea obscura** Ridgw. **Western Gnatcatcher.**[1]

Similar to *P. cærulea*, but darker and less blue above; lores darker; superciliary streak less distinct; white on tail-feathers more restricted. *Hab.* Southwestern United States (California, Arizona, etc.) and western Mexico.

(100.) Page 581, **Sialia mexicana** requires subdivision, as follows:

- *c*¹. Chestnut color of back extremely variable in amount, sometimes entirely absent, but in the latter case the chestnut of the breast continuous anteriorly.
  - *d*¹. Back usually (?) with little if any chestnut; blue of upper parts of a rich deep "smalt" hue; wing in adult males averaging 4.38. *Hab.* Highlands of southern Mexico.
    S. mexicana Swains. **Mexican Bluebird.**
  - *d*². Back usually with much chestnut, often wholly so, very rarely with a mere trace; blue of upper parts varying from rich ultramarine to light cobalt; wing in adult males averaging 4.07.
    - *e*¹. Back with median portion more or less blue, the chestnut usually in form of lateral patches, rarely reduced to a mere trace on each side. *Hab.* Pacific coast, from British Columbia to southern California, east to western Nevada, casually, during migrations, to New Mexico...... 767. **S. mexicana occidentalis** (Towns.). **Western Bluebird.**[2]
    - *e*². Back wholly chestnut. *Hab.* Rocky Mountain district, and south into northern Mexico......... 767*a*. **S. mexicana bairdi** Ridgw. **Baird's Bluebird.**[3]

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[1] *Polioptila cærulea obscura* Ridgw., Proc. U. S. Nat. Mus. v. March 21, 1883, 535, foot-note.

[2] *Sialia occidentalis* Towns., Journ. Ac. Nat. Sci. Philad. vii. 1837, 188.—*Sialia mexicana occidentalis* Ridgw., Auk, xi. April, 1894, 151, 154.

[3] *Sialia mexicana bairdi* Ridgw., Auk, xi. April, 1894, 151, 157.

c^2. Chestnut color of back and breast greatly reduced in extent, usually wholly wanting or barely indicated on the former, and divided into two lateral patches by backward extension of blue of throat on the latter. Blue of upper parts intermediate between "smalt" and "ultramarine;" wing in adult males averaging 4.29. *Hab.* San Pedro Mountains, Lower California..... 767*b*. **S. mexicana anabelæ** ANTHONY. **San Pedro Bluebird.**[1]

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[1] *Sialia mexicana anabelæ* ANTHONY, Proc. Cal. Ac. Sci. 2d ser. ii. Oct. 1889, 79.

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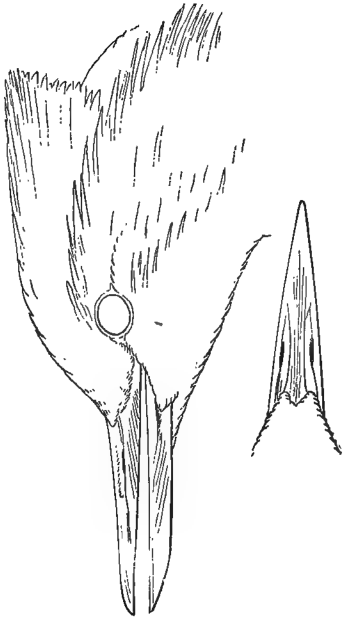
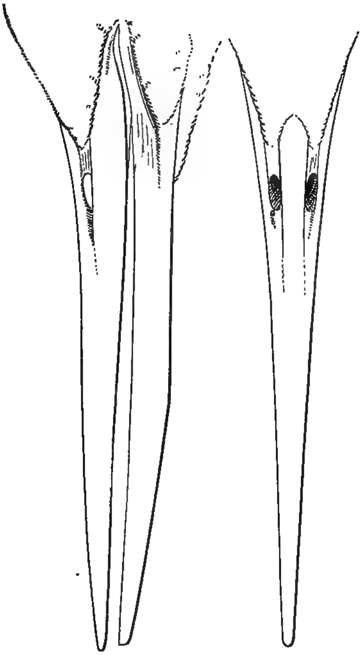
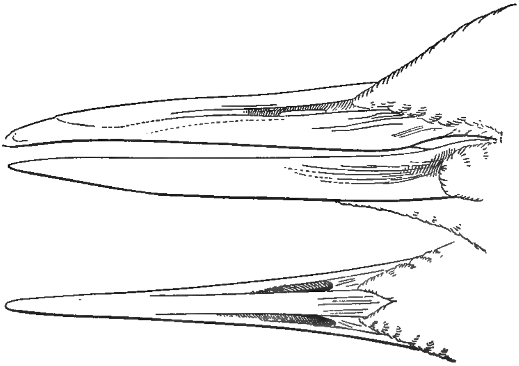
THE END.



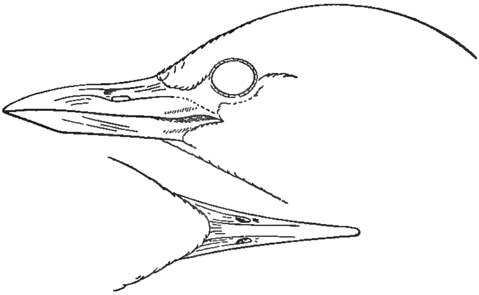
2. **Colymbus (Dytes)** californicus.



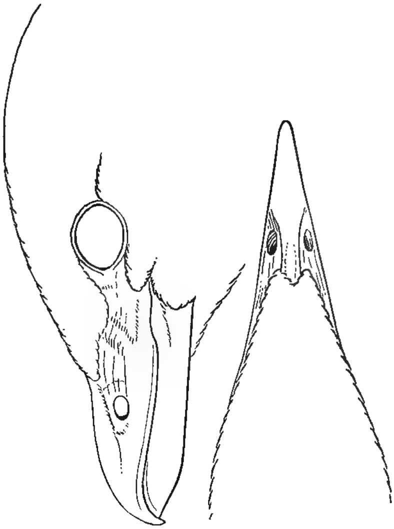
1. **Æchmophorus** occidentalis.



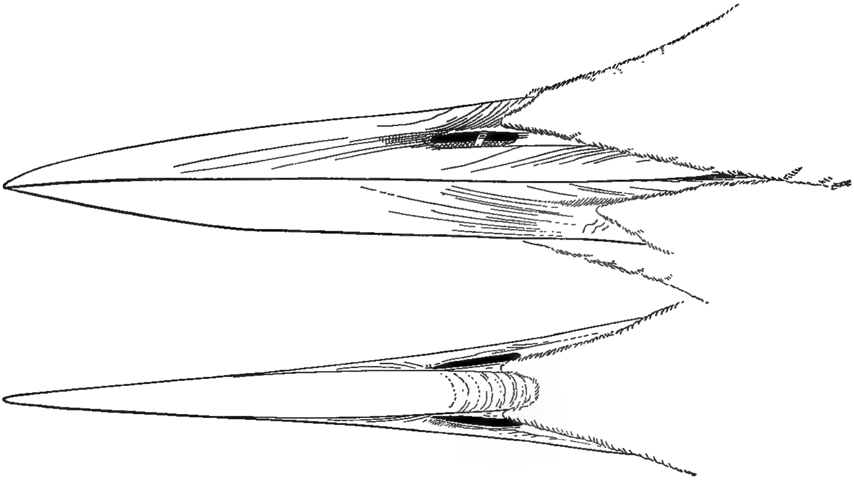
3. **Colymbus** holbœllii.



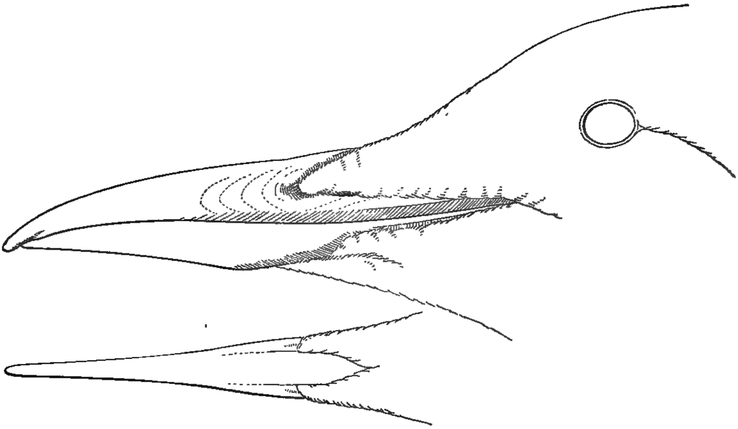
4. Colymbus (**Podiceps**) dominicus.



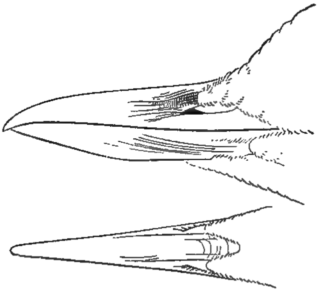
5. **Podilymbus** podiceps.



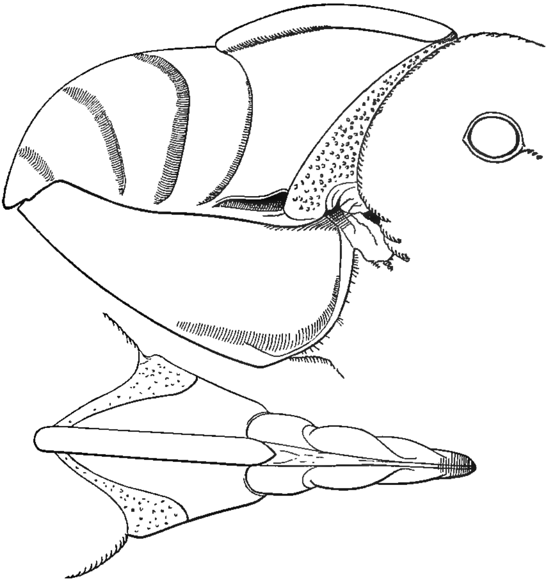
1. **Urinator** arcticus.



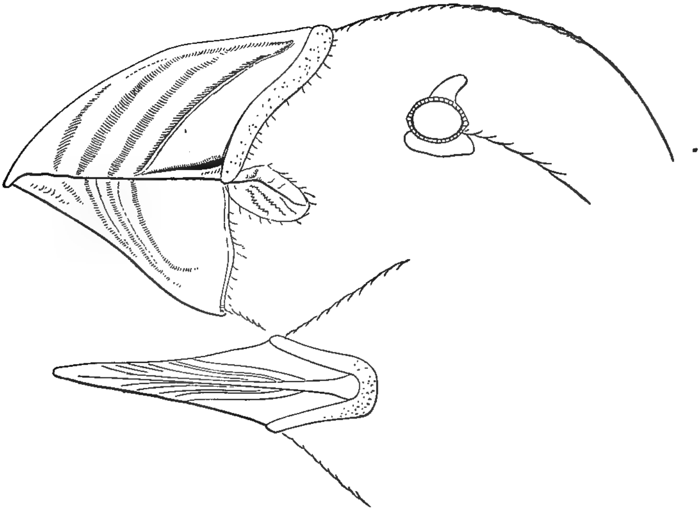
2. **Lomvia** troile.



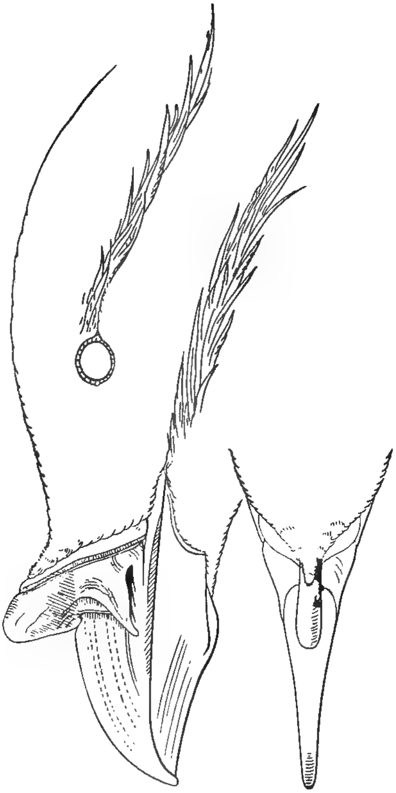
3. **Cepphus** columba.



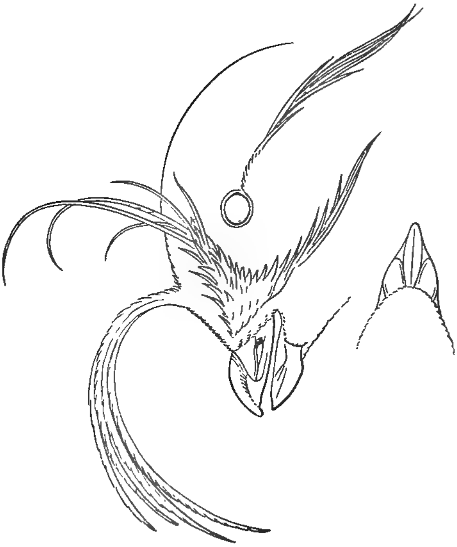
1. **Lunda** cirrhata.



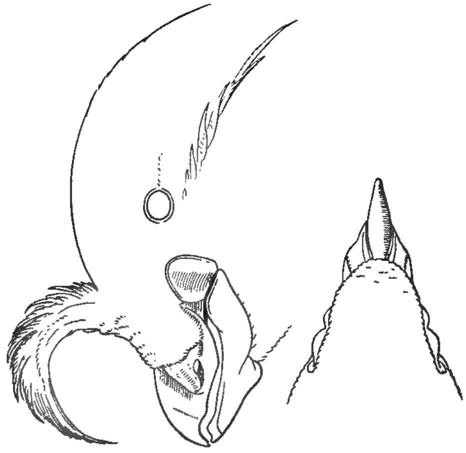
2. **Fratercula** arctica.



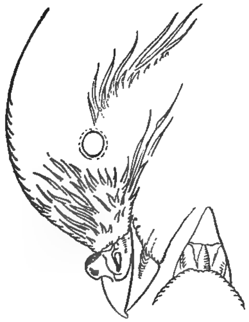
1. **Cerorhinca** monocerata.



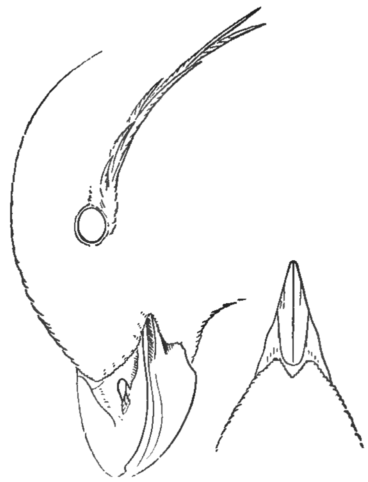
2. Simorhynchus (**Phaleris**) pygmæus.



3. **Simorhynchus** cristatellus.

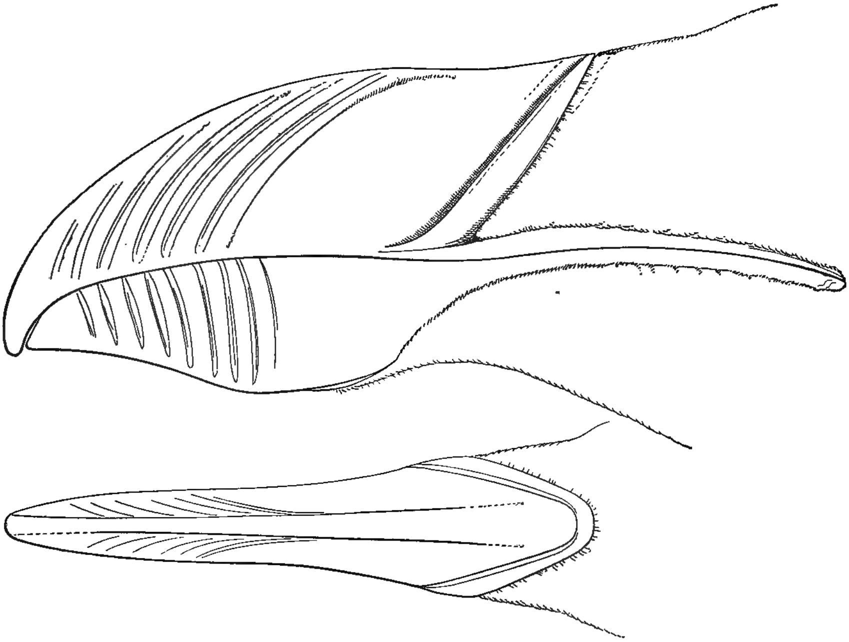


4. Simorhynchus (**Ciceronia**) pusillus.

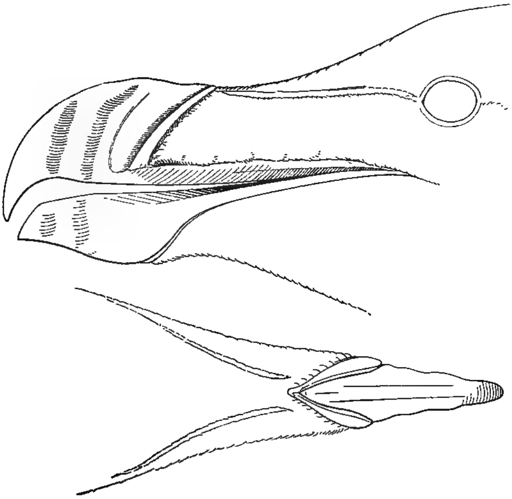


5. **Cyclorrhynchus** psittaculus.

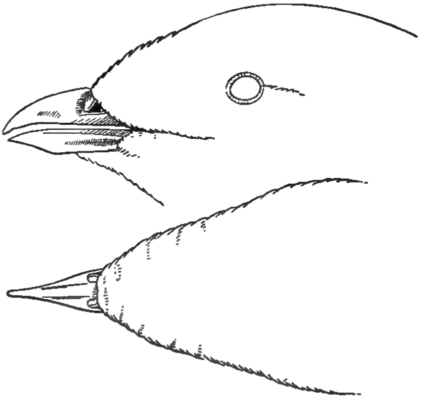
Plate V.



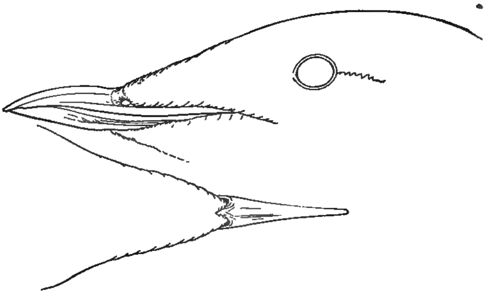
1. **Plautus** impennis.



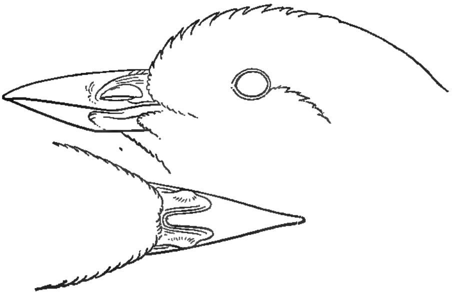
2. **Alca** torda.



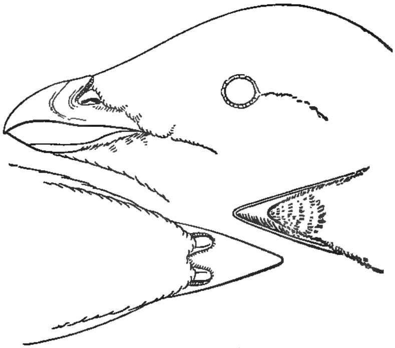
1. **Synthliboramphus** antiquus.



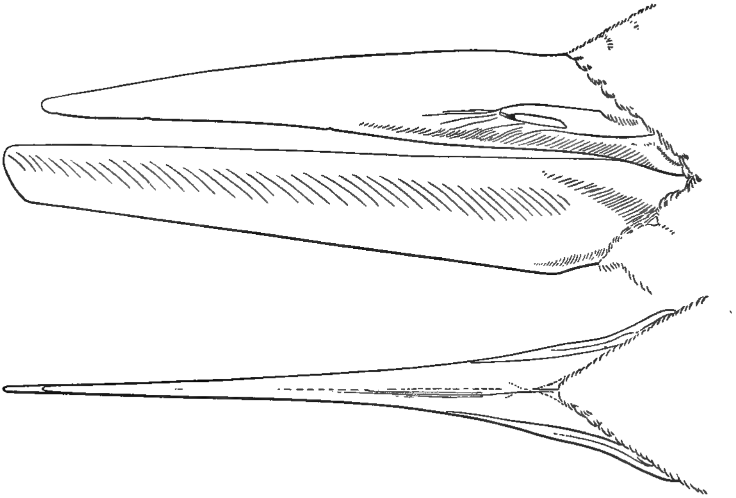
2. **Brachyramphus** marmoratus.



3. **Ptychoramphus** aleuticus.

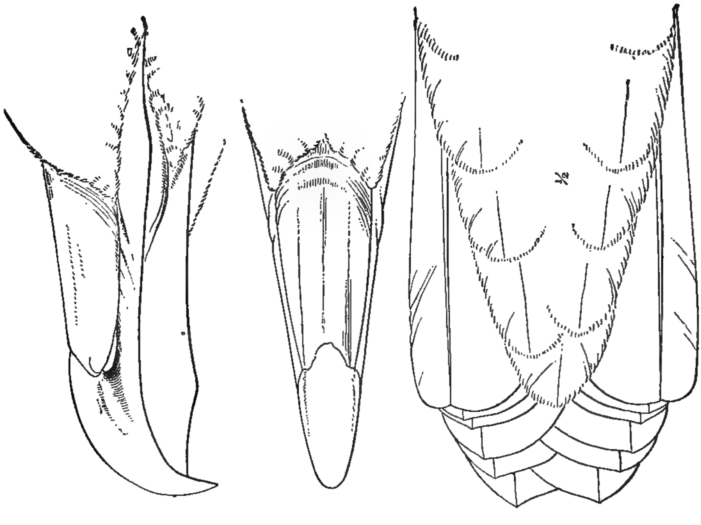


4. **Alle** alle.

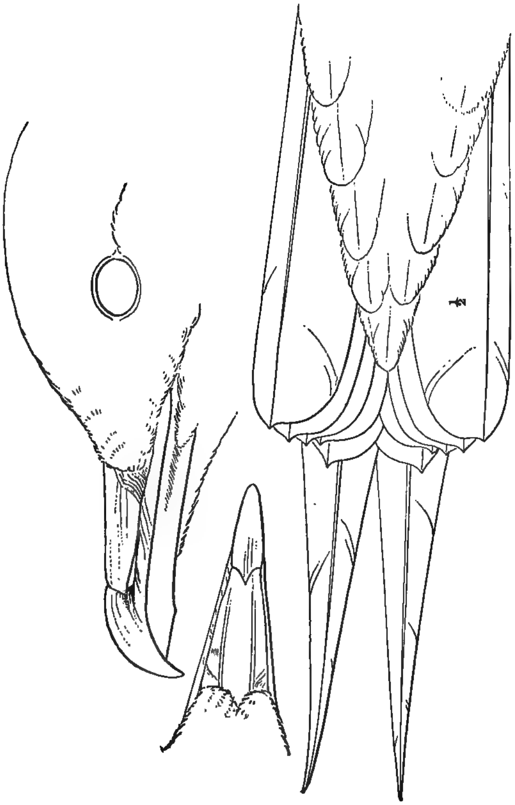


5 **Rynchops** nigra.

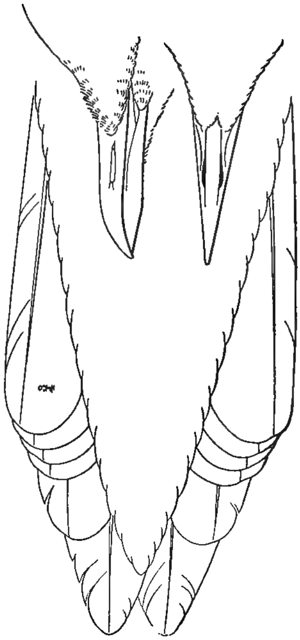
Plate VII.



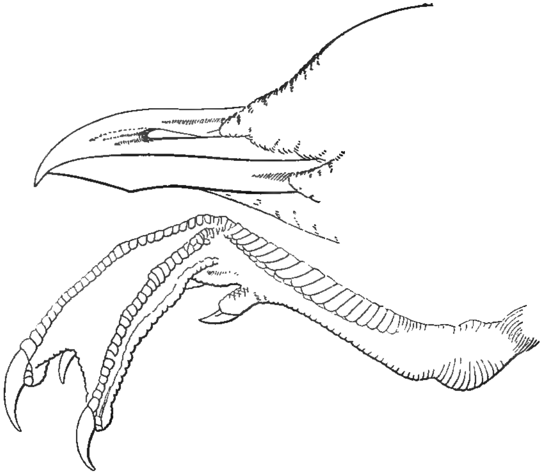
1. Megalestris skua.

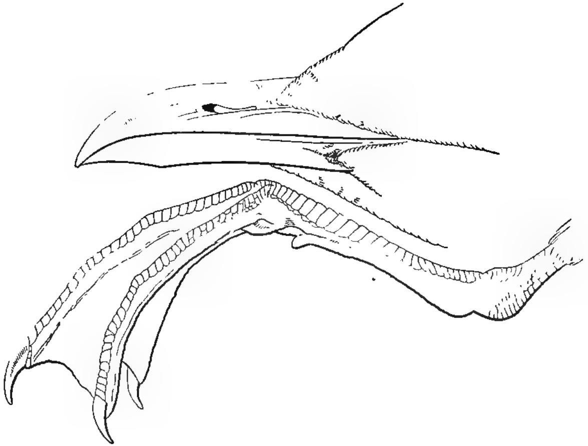


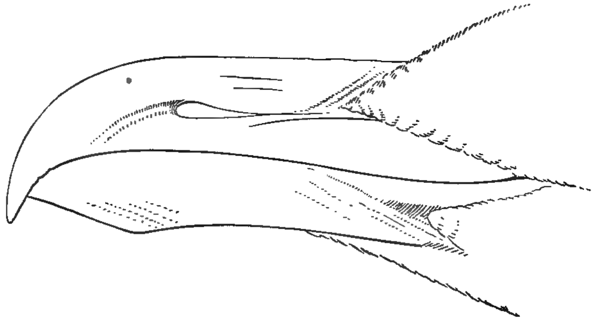
2. Stercorarius parasiticus.



3. Rhodostethia rosea.


1. **Gavia** alba.


2. **Rissa** tridactyla.


3 **Larus** marinus.

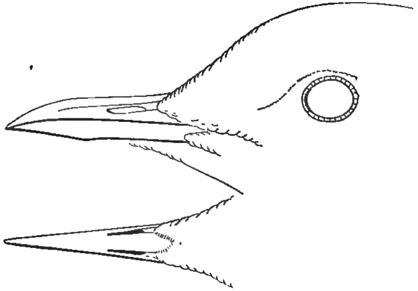
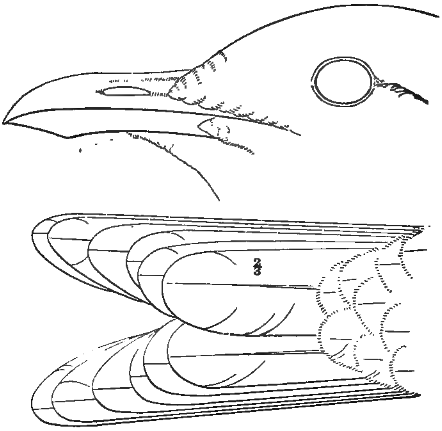
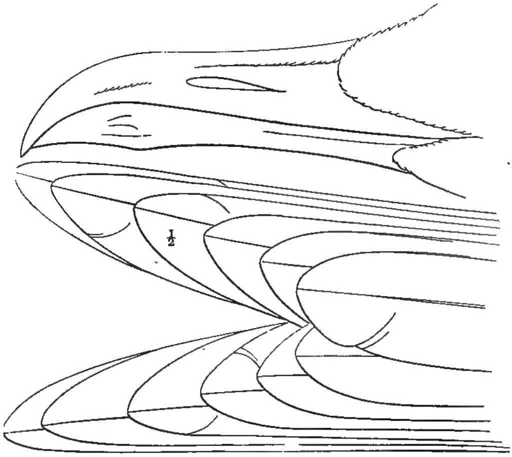

4. Larus (**Hydrocolæus**) minutus.

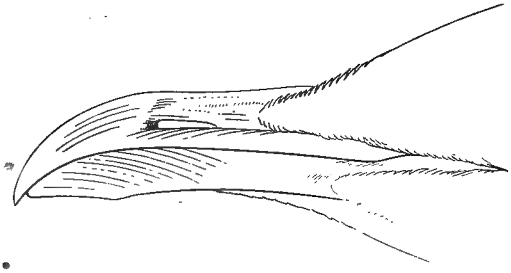
Plate IX.



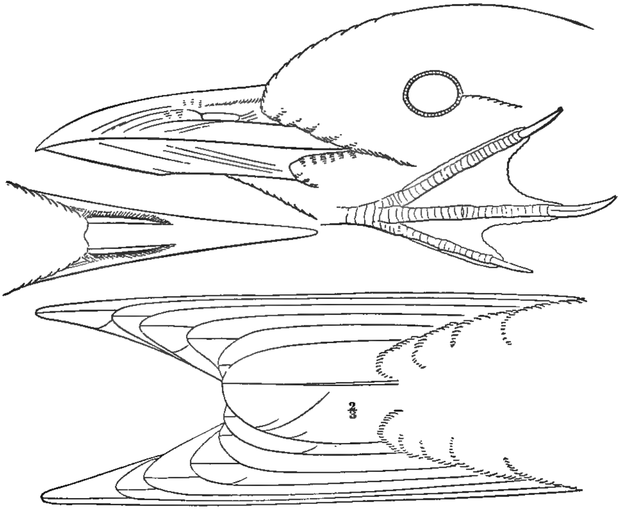
1. **Xema** sabinii.



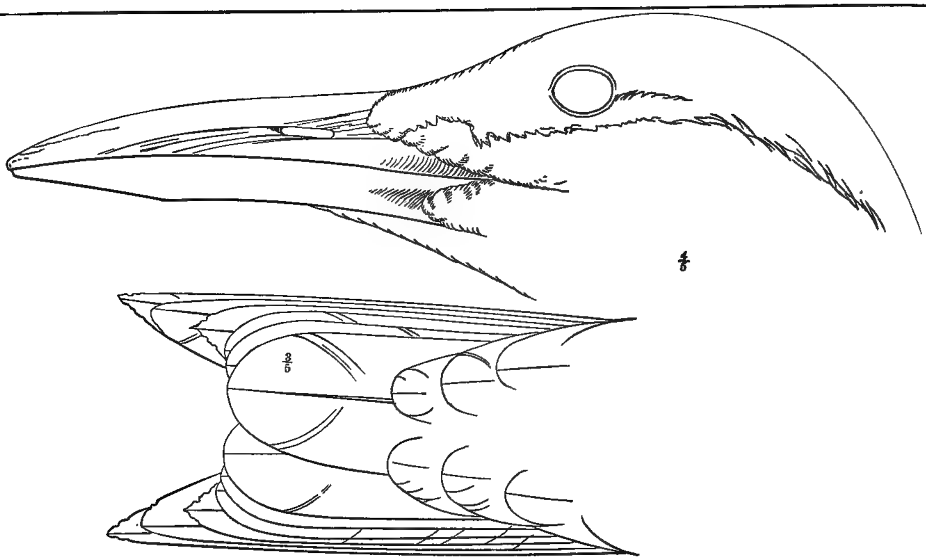
2. Xema (**Creagrus**) furcata.



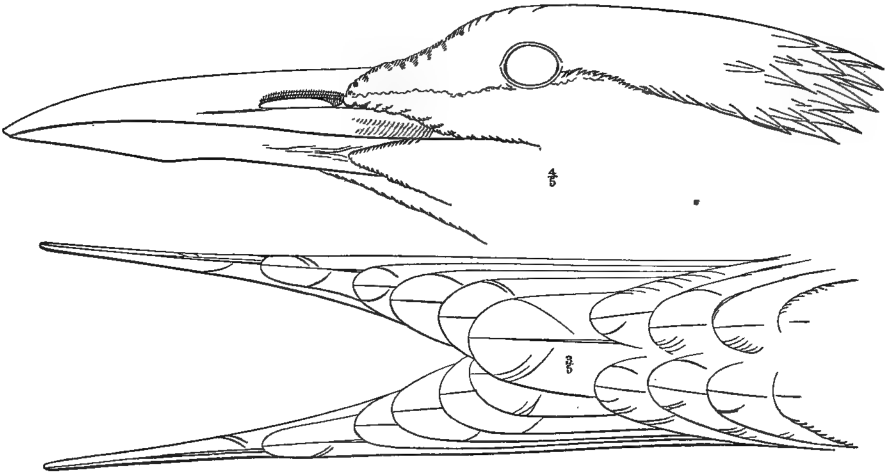
3. Larus (**Blasipus**) heermanni.



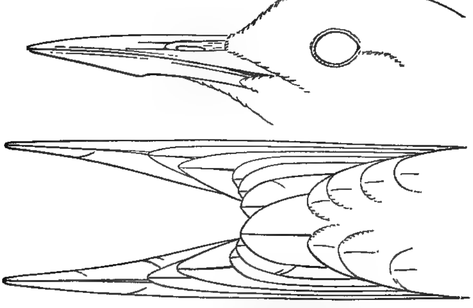
4. **Gelochelidon** nilotica.



1. Sterna (**Thalasseus**) tschegrava.

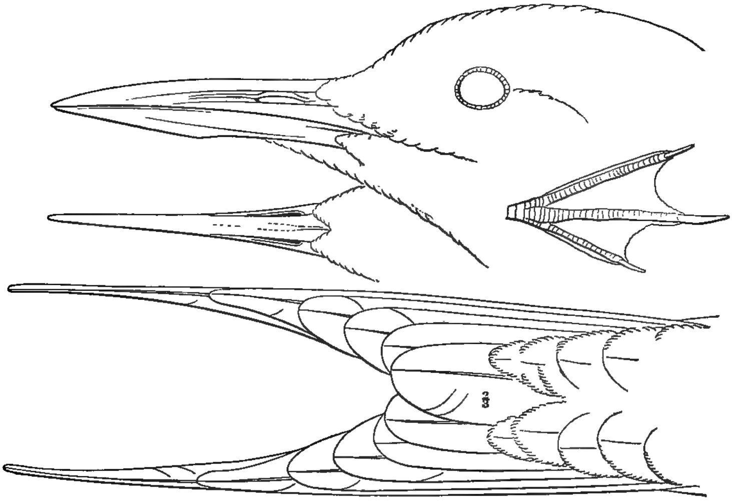


2. Sterna (**Actochelidon**) maxima.

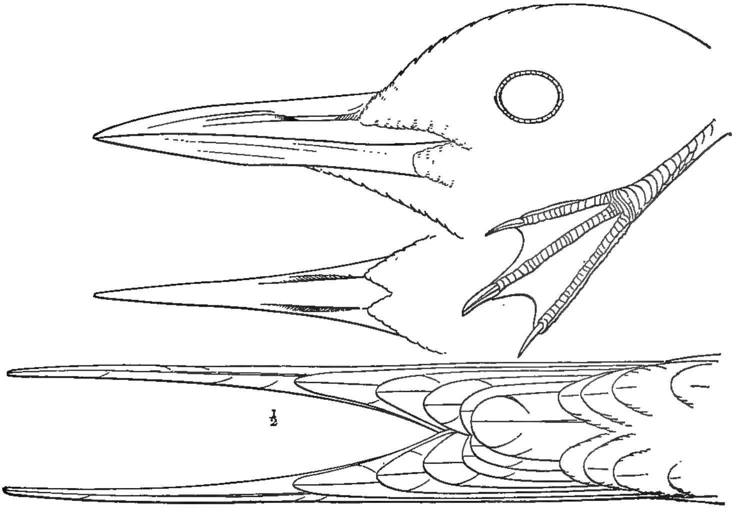


3. Sterna (**Sternula**) antillarum.

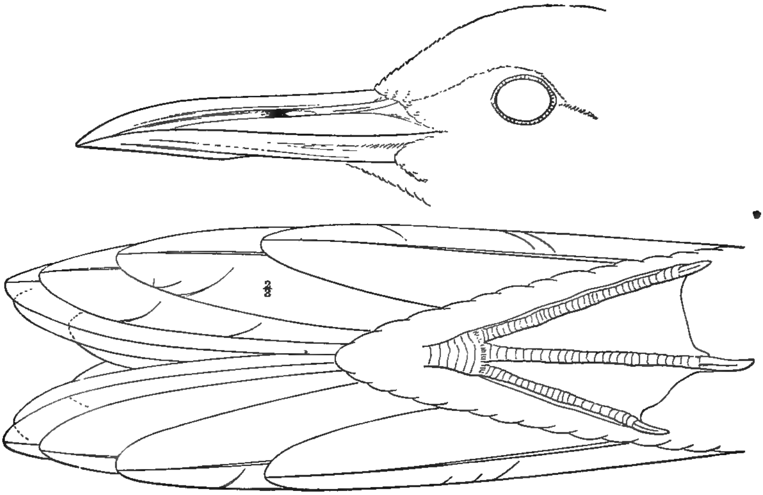
Plate XI.



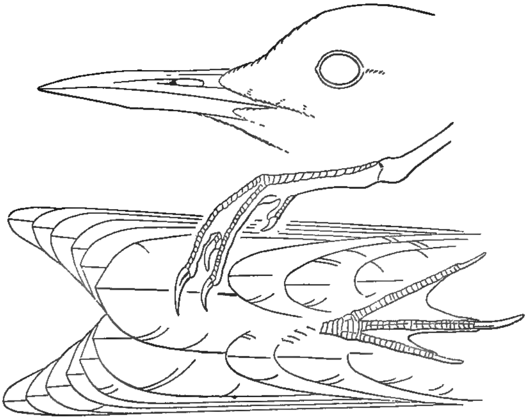
1. **Sterna** hirundo.



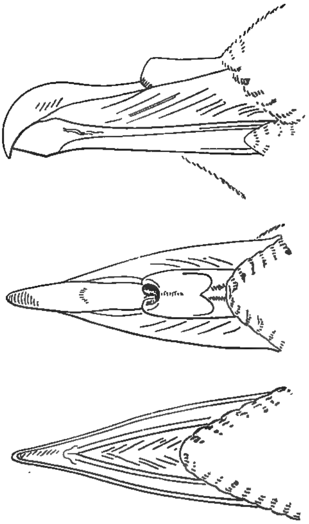
2. Sterna (**Haliplana**) fuliginosa.



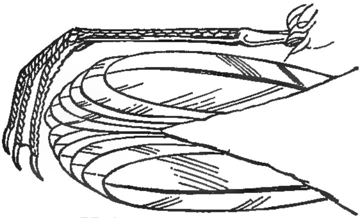
1. **Anous** stolidus.



2. **Hydrochelidon** surinamensis.

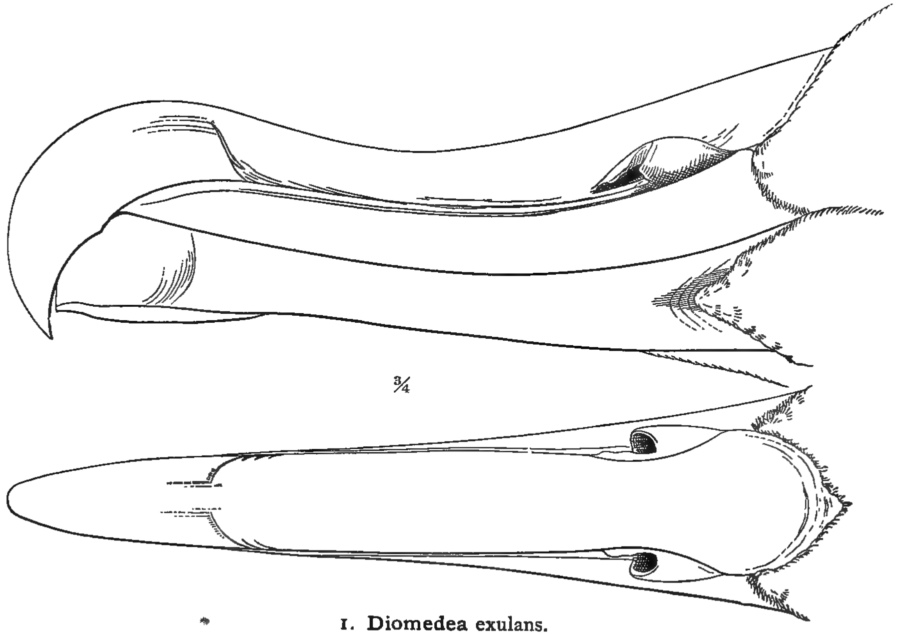


3. **Daption** capensis.

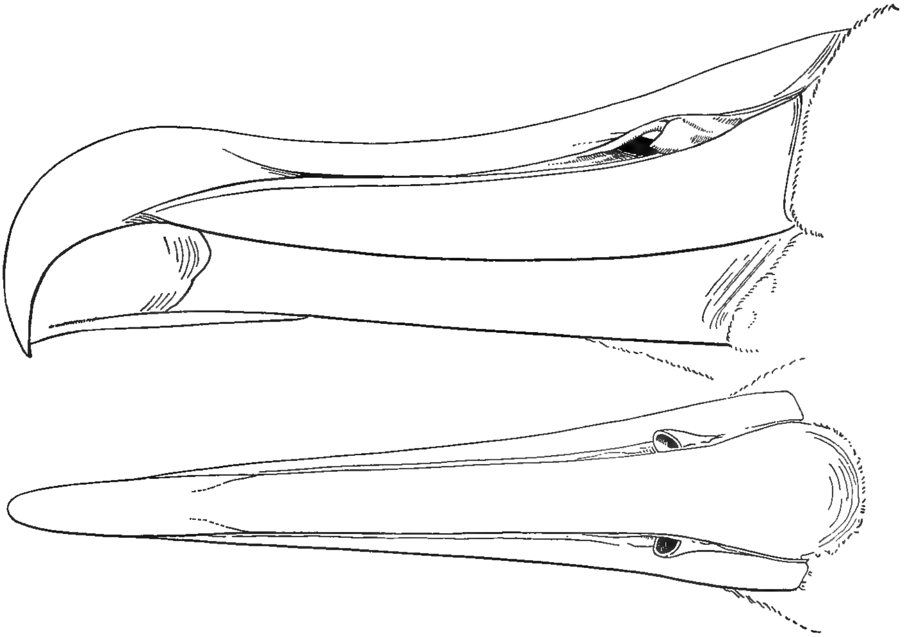


4. **Halocyptena** microsoma.

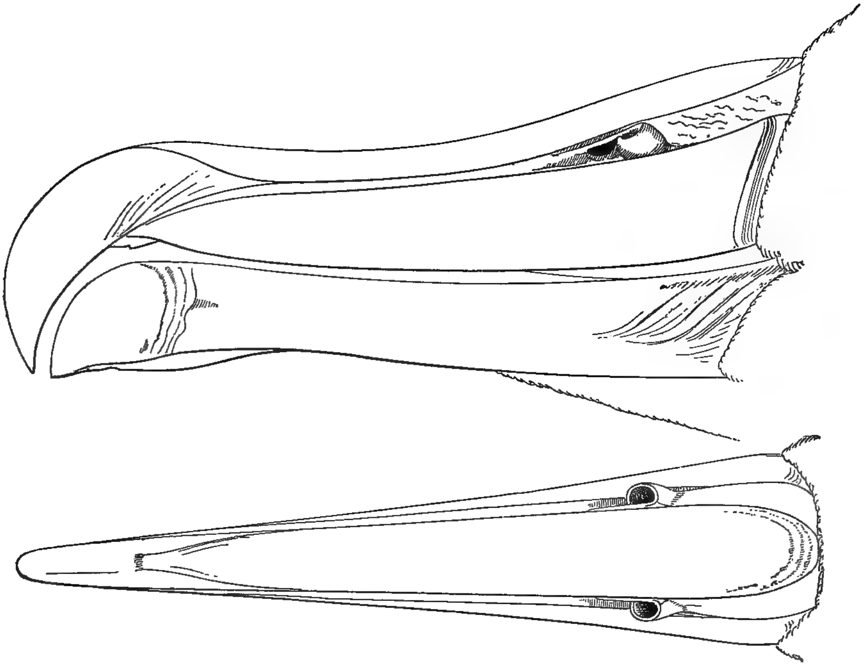
Plate XIII.



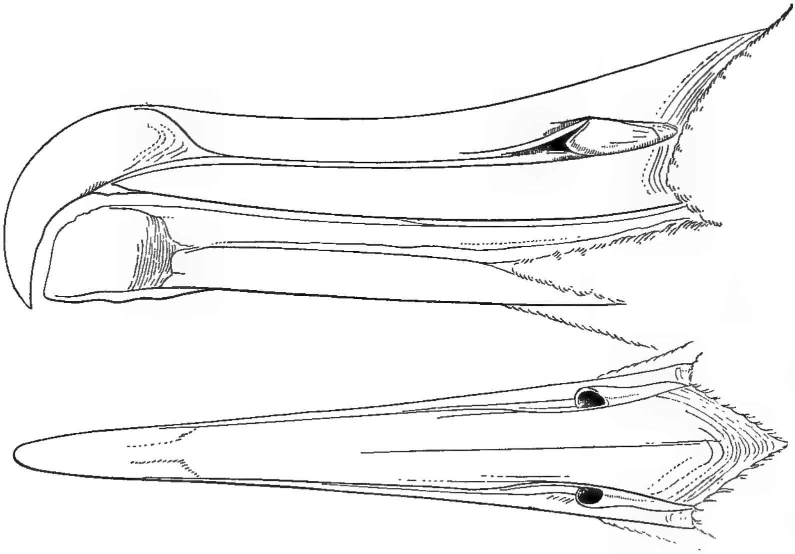
1. Diomedea exulans.



2. Diomedea (**Thalassarche**) melanophrys.

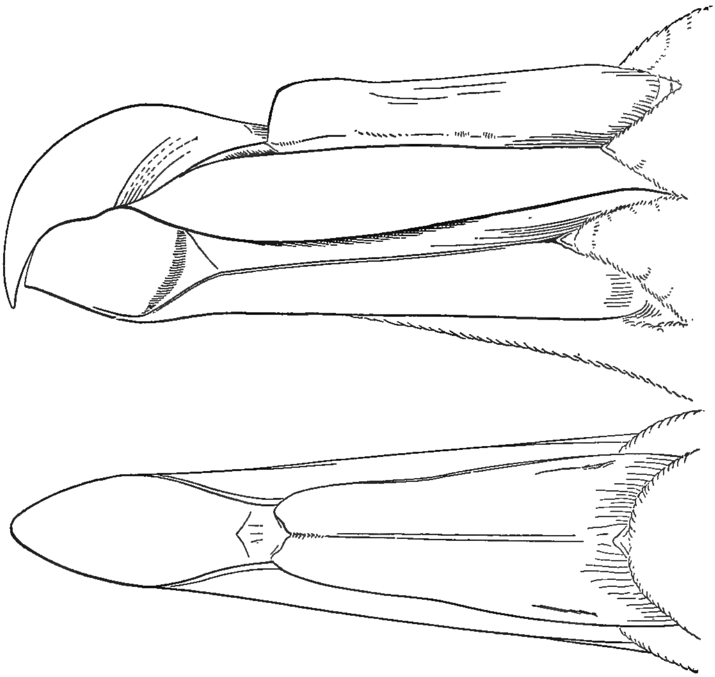


1. **Thalassogeron** culminatus.

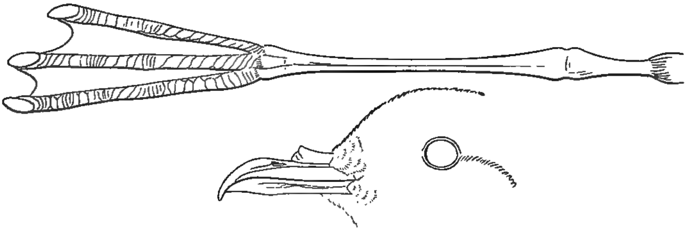


2. **Phœbetria** fuliginosa.

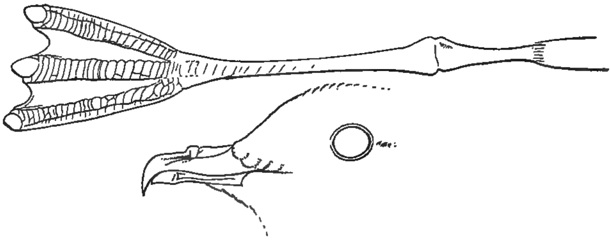
Plate XV.



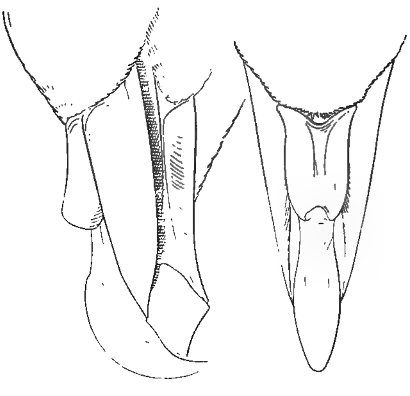
1. **Ossifraga** gigantea.



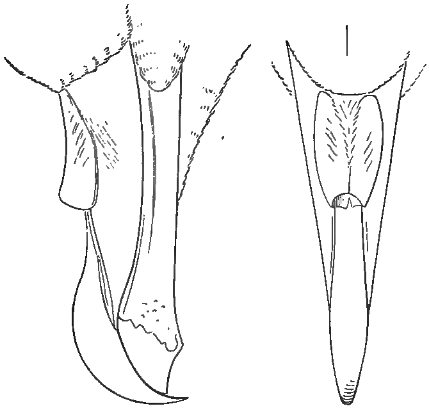
2. **Pelagodroma** marina.



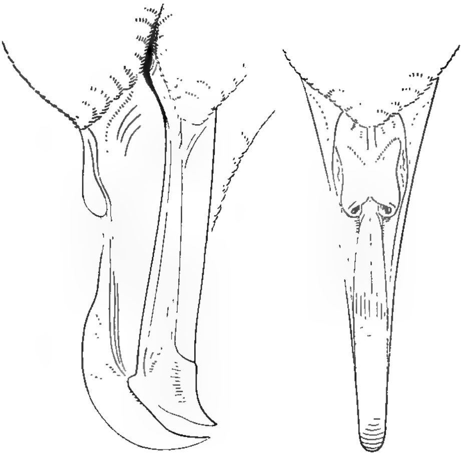
3. **Cymodroma** grallaria.



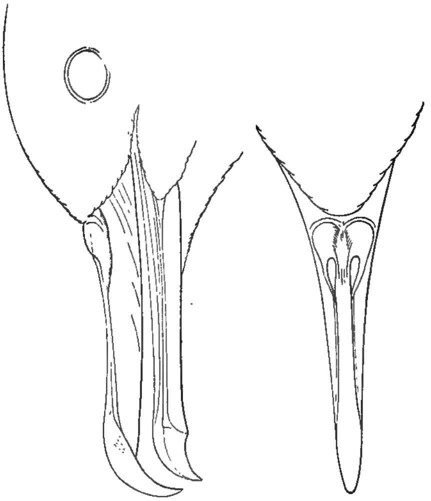
1. **Fulmarus glacialis.**



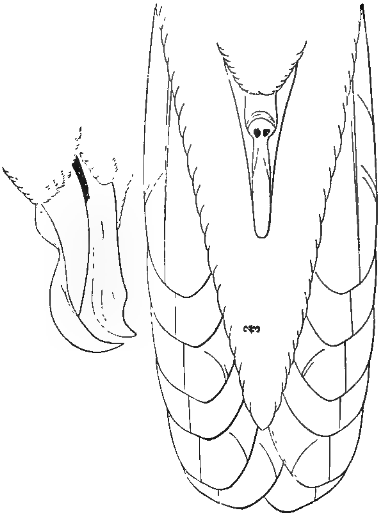
2. **Fulmarus (Priocella) glacialoides.**



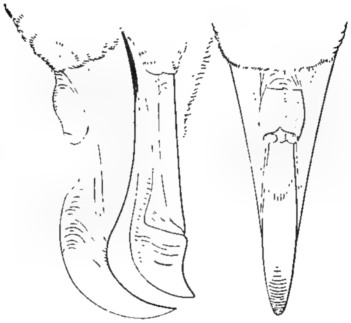
3. Puffinus (Priofinus) cinereus.



4. **Puffinus puffinus.**

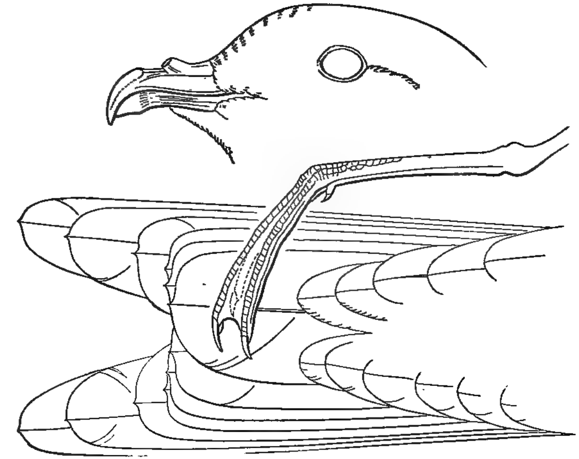


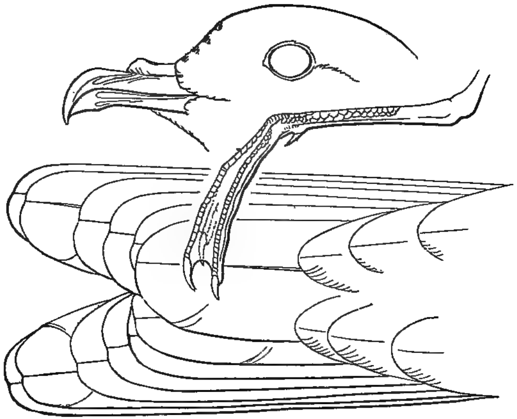
5. **Bulweria bulweri.**

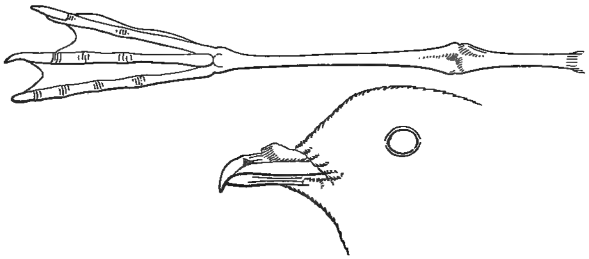


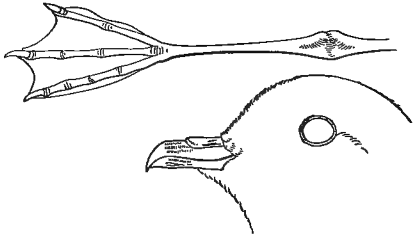
6. **Æstrelata hasitata.**

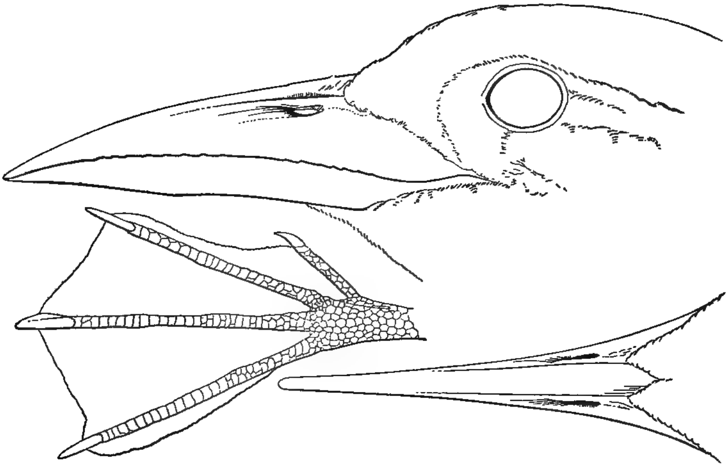
Plate XVII.


1 **Oceanodroma** furcata.

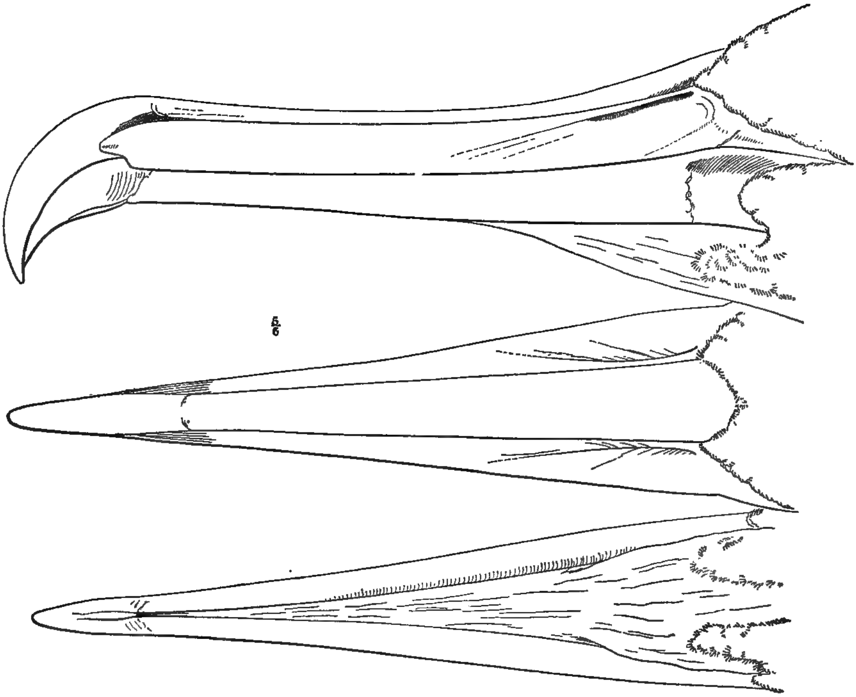

2. Oceanodroma (**Cymochorea**) leucorhoa.


3. **Oceanites** oceanicus.


4. **Procellaria** pelagica.

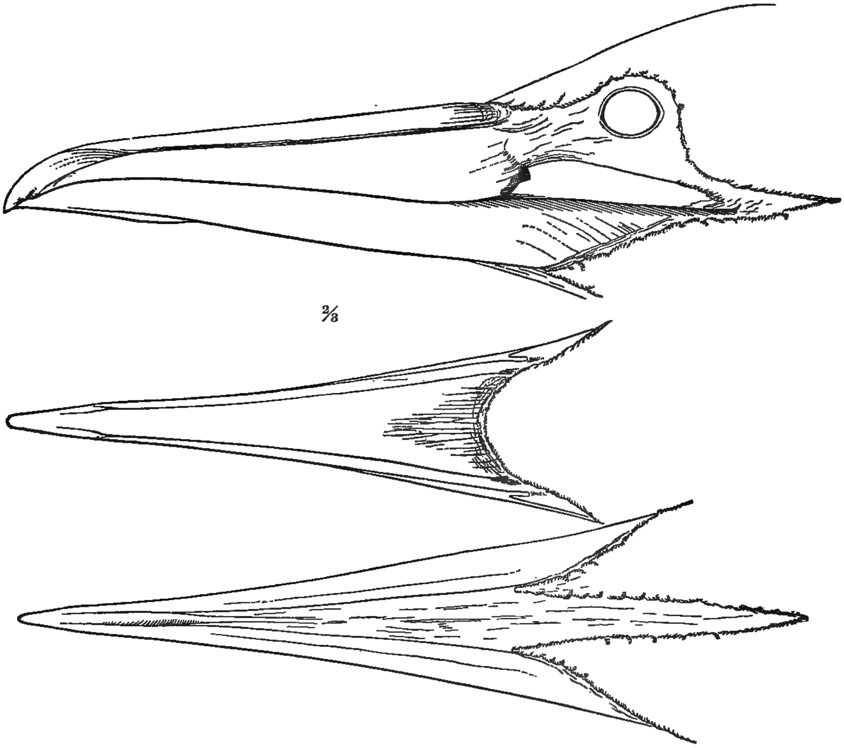


1. **Phaëthon** flavirostris.

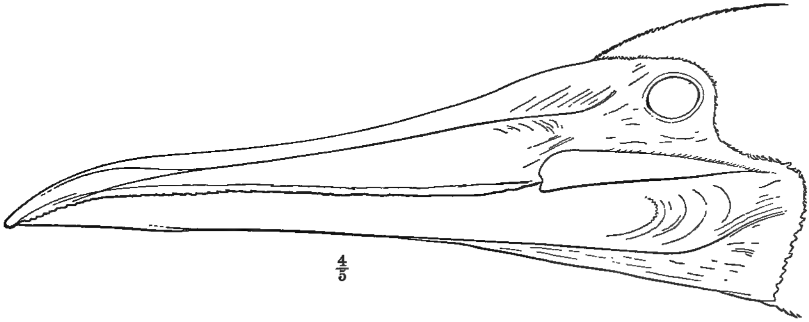


2. **Fregata** aquila.

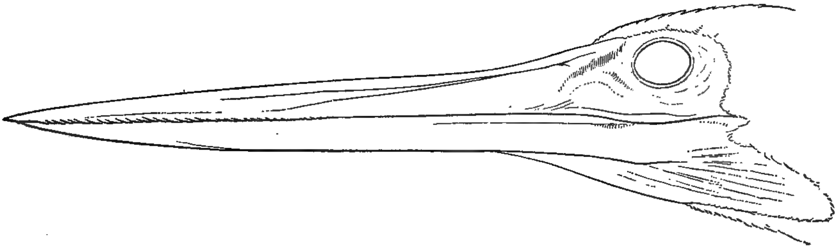
Plate XIX.



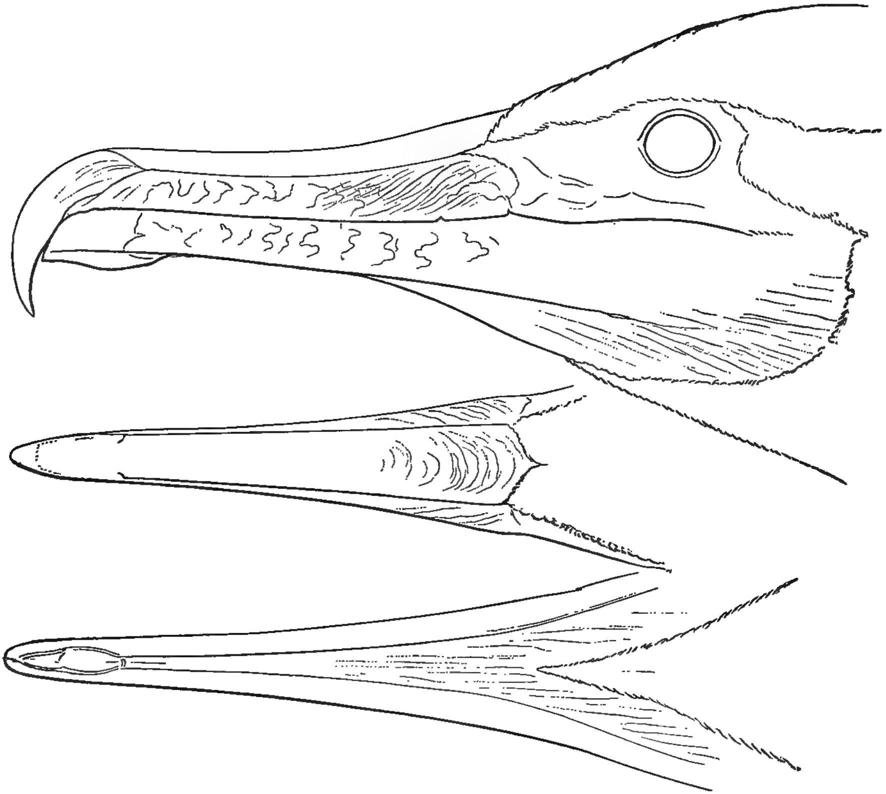
1. Sula (**Dysporus**) bassana.



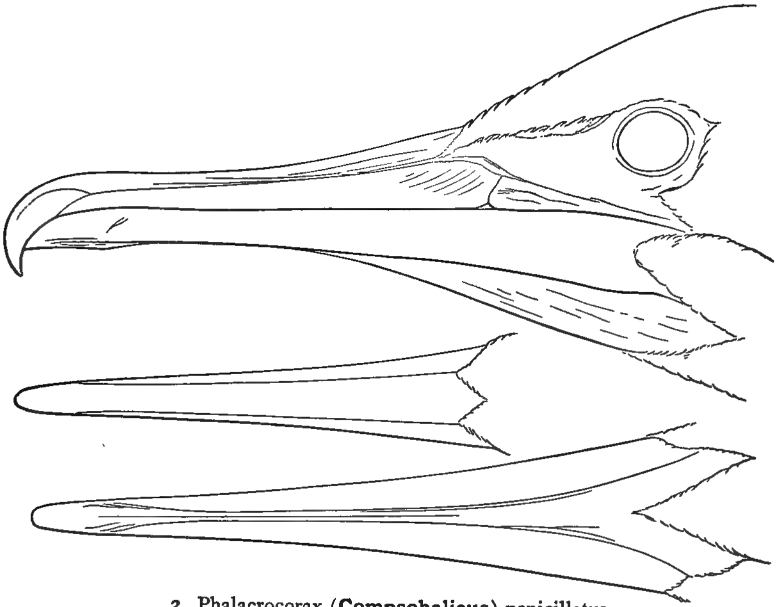
2. **Sula** sula.



3. **Anhinga** anhinga.

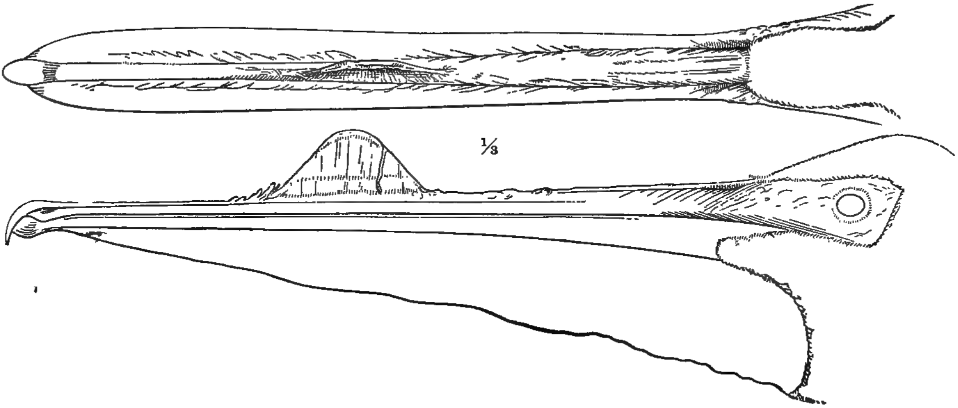


1. **Phalacrocorax** carbo.

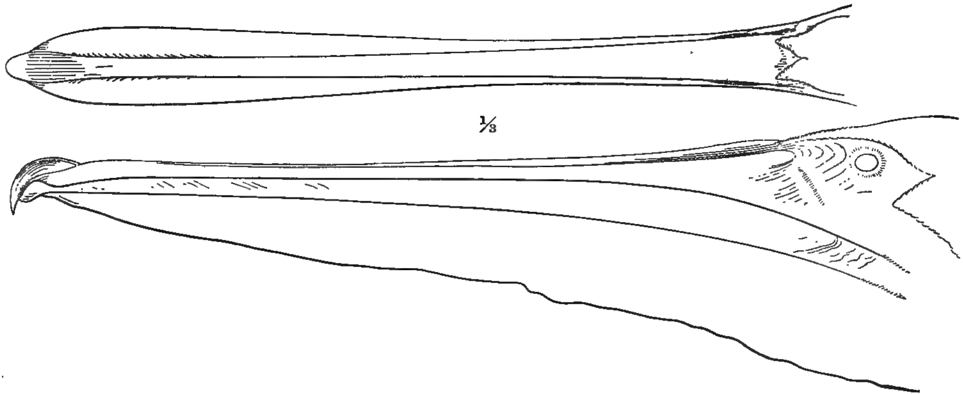


2. Phalacrocorax (**Compsohalieus**) penicillatus.

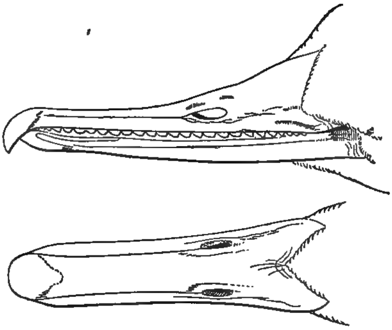
Plate XXI.



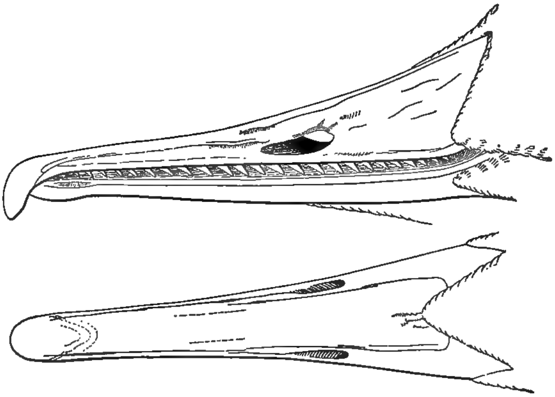
1. Pelecanus (**Cyrtopelicanus**) erythrorhynchos.



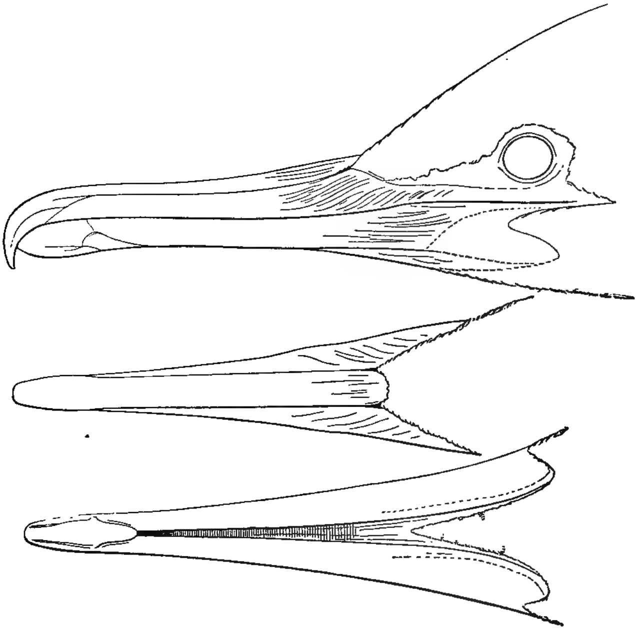
2. Pelecanus (**Leptopelicanus**) fuscus.



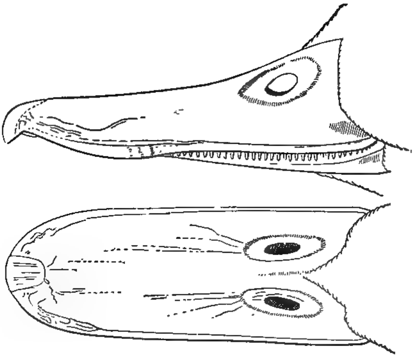
3. **Lophodytes** cucullatus.



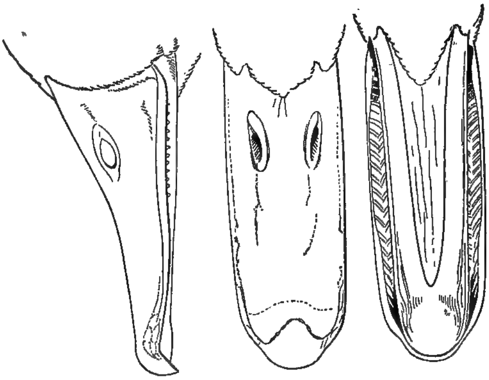
4. **Merganser** americanus.



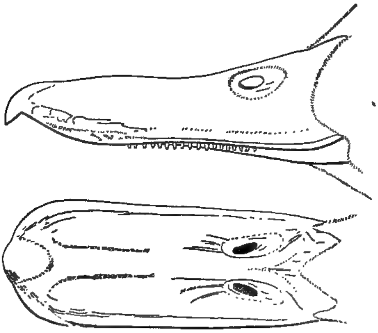
1. Phalacrocorax (**Urile**) pelagicus.



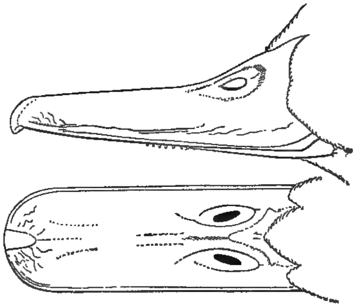
2. Anas (**Chaulelasmus**) strepera.



3. Anas (**Mareca**) americana.

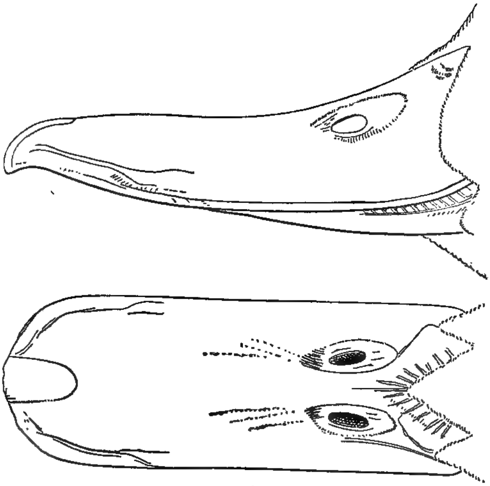


4. Anas (**Querquedula**) discors.

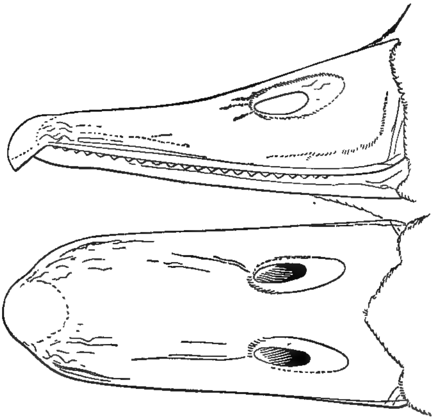


5. Anas (**Nettion**) carolinensis.

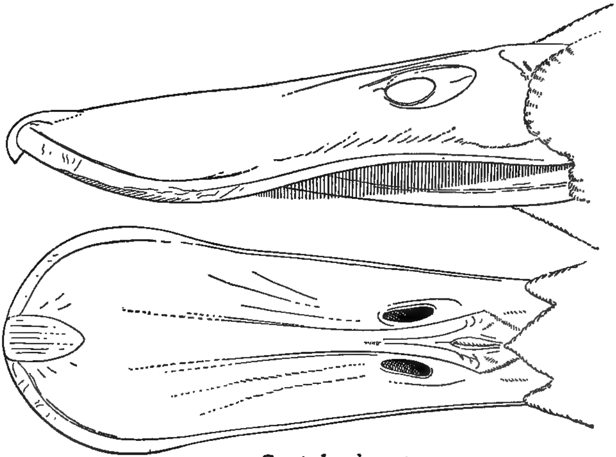
Plate XXIII.



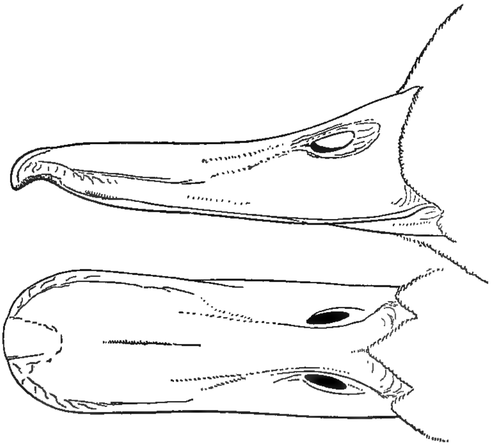
1. **Anas** boschas.



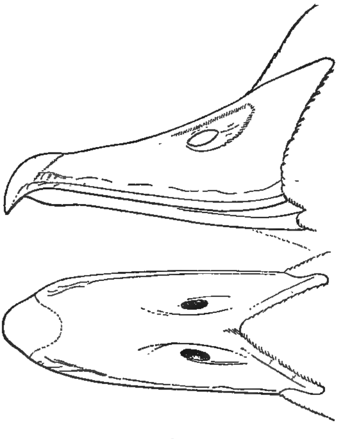
2. **Netta** rufina.



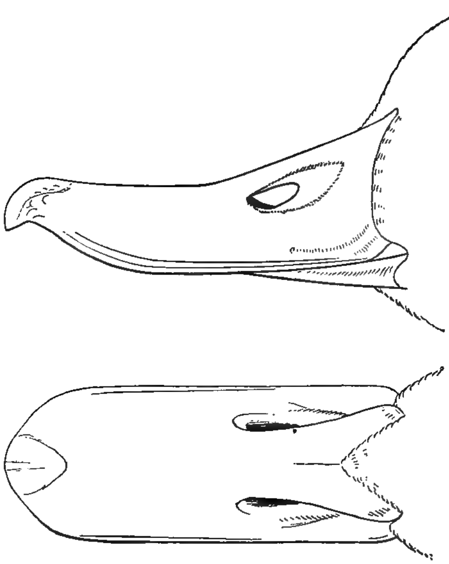
3. **Spatula** clypeata.



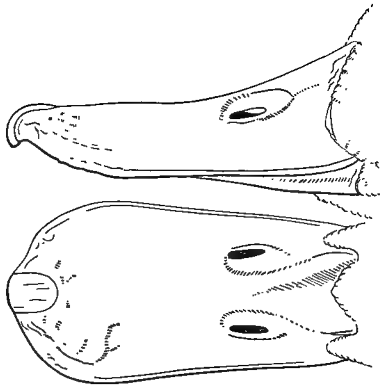
4. **Dafila** acuta.



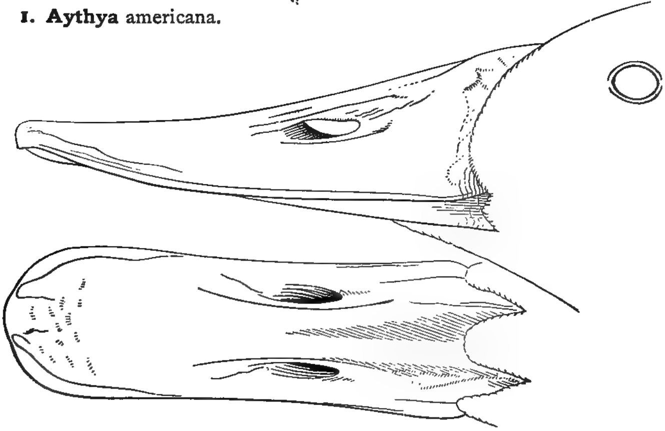
5. **Aix** sponsa.



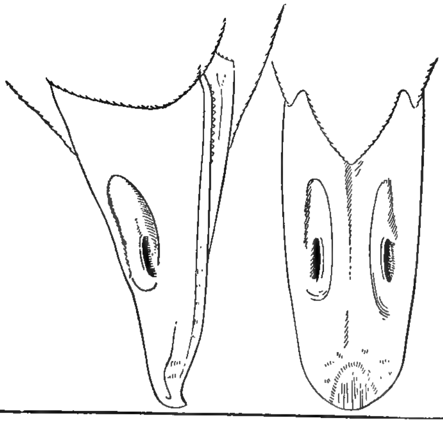
1. **Aythya** americana.



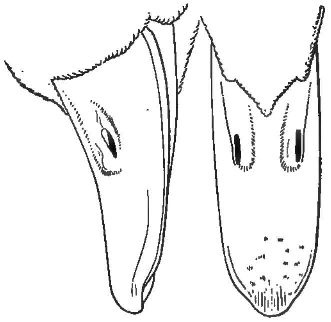
2. Aythya (**Fuligula**) marila.



3. Aythya (**Aristonetta**) vallisneria.

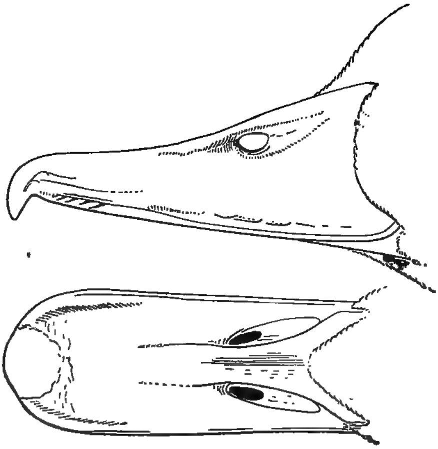


4. **Glaucionetta** americana.

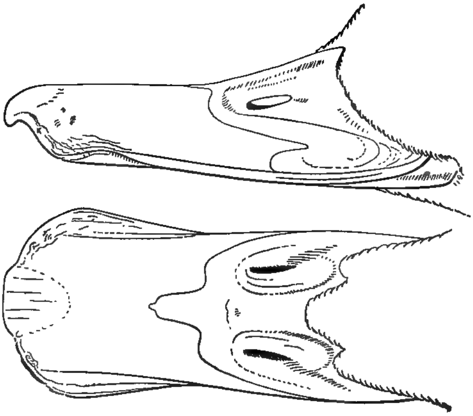


5. **Charitonetta** albeola.

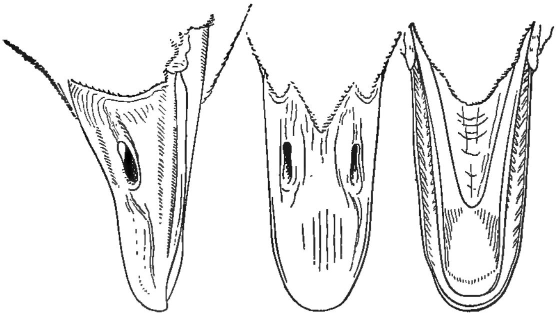
Plate XXV.



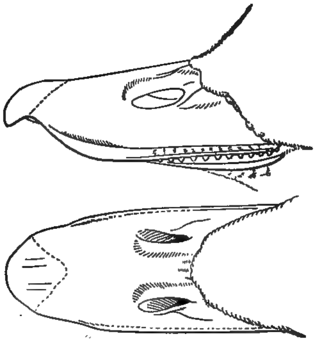
1. **Dendrocygna** fulva.



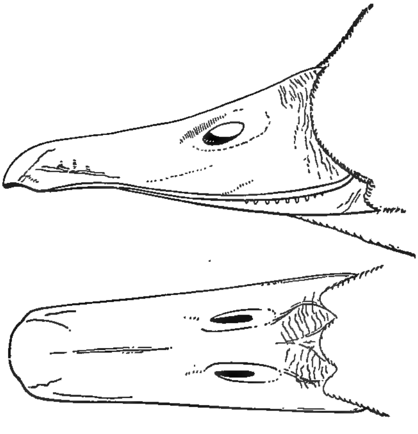
2. **Camptolaimus** labradorius.



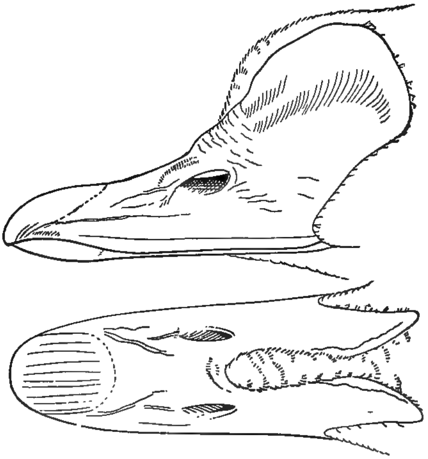
3. **Histrionicus** histrionicus.



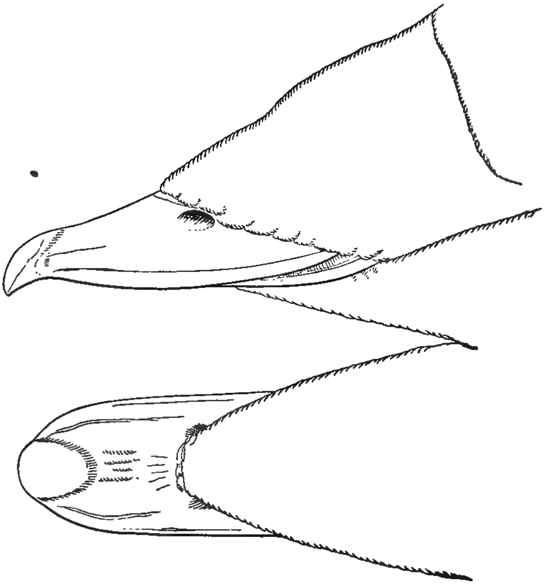
4. **Clangula** hyemalis.



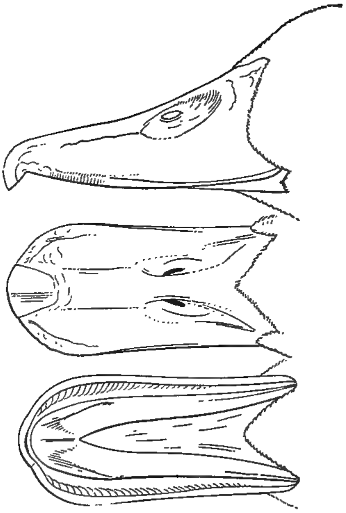
5. **Eniconetta** stelleri.



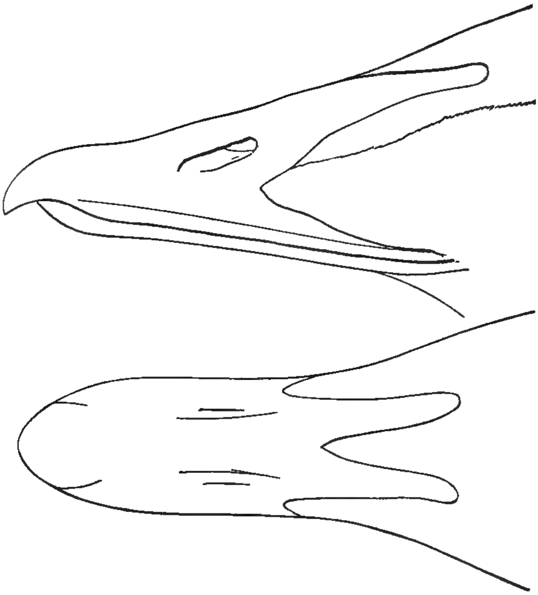
6. Somateria (**Erionetta**) spectabilis.



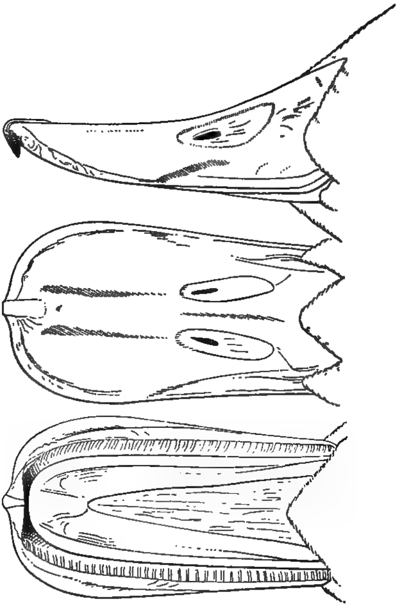
1. **Arctonetta** fischeri.



2. **Nomonyx** dominicus.

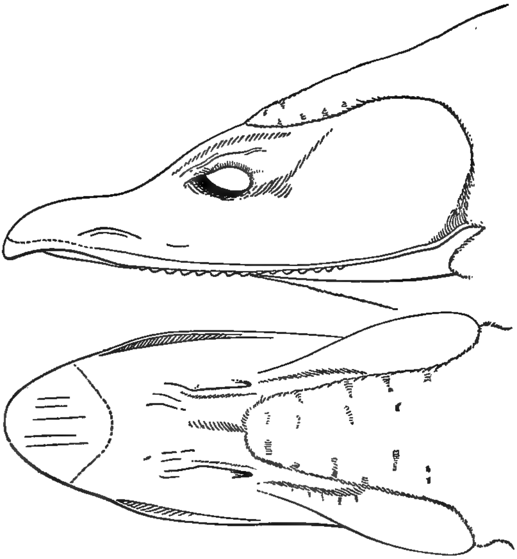


3. **Somateria** mollissima.

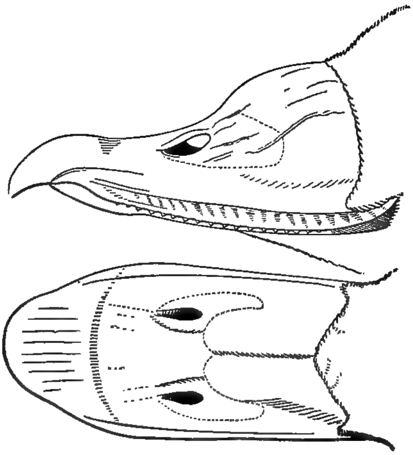


4. **Erismatura** rubida.

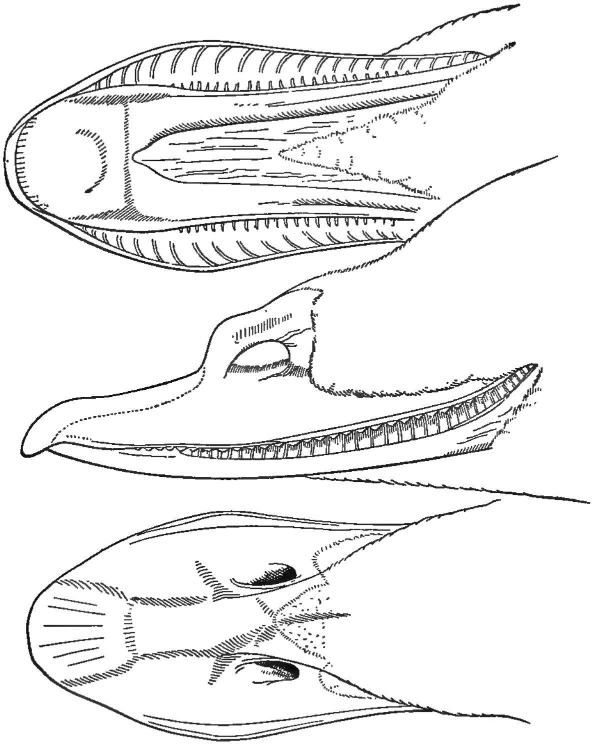
Plate XXVII.



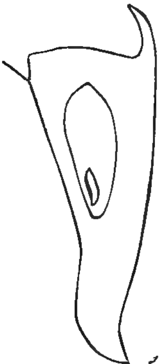
1. Oidemia (**Pelionetta**) perspicillata.



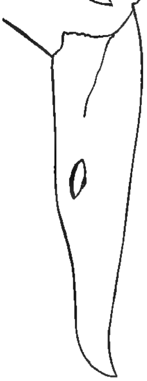
2. **Oidemia** americana.



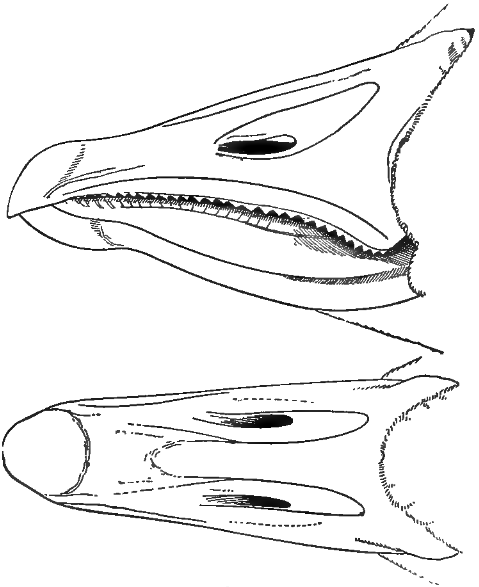
3. Oidemia (**Melanitta**) deglandi.



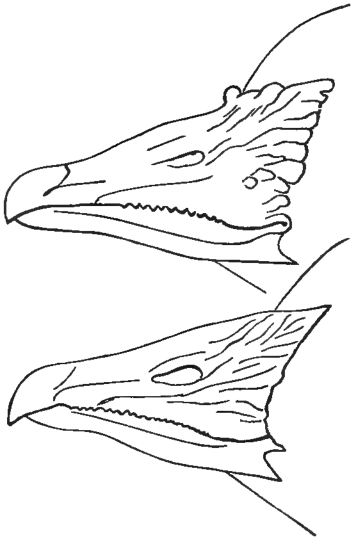
5. **Oidemia** americana, ♀.



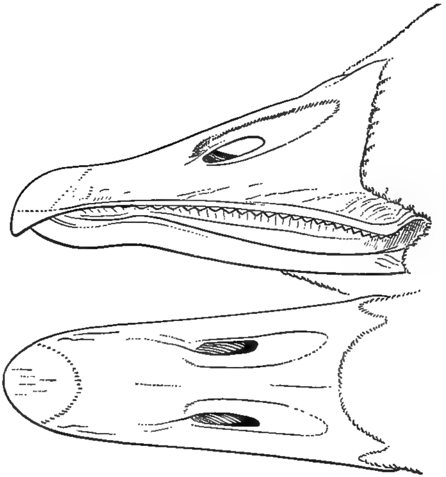
4. **Oidemia** nigra, ♀.



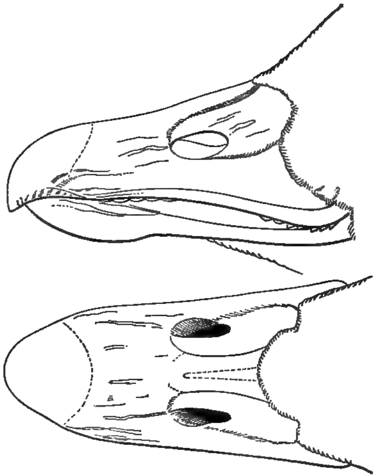
1. **Chen** hyperborea.



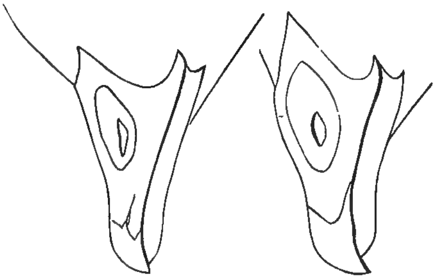
2. Chen (“ **Exanthemops**”) rossii.



3. **Anser** gambeli.

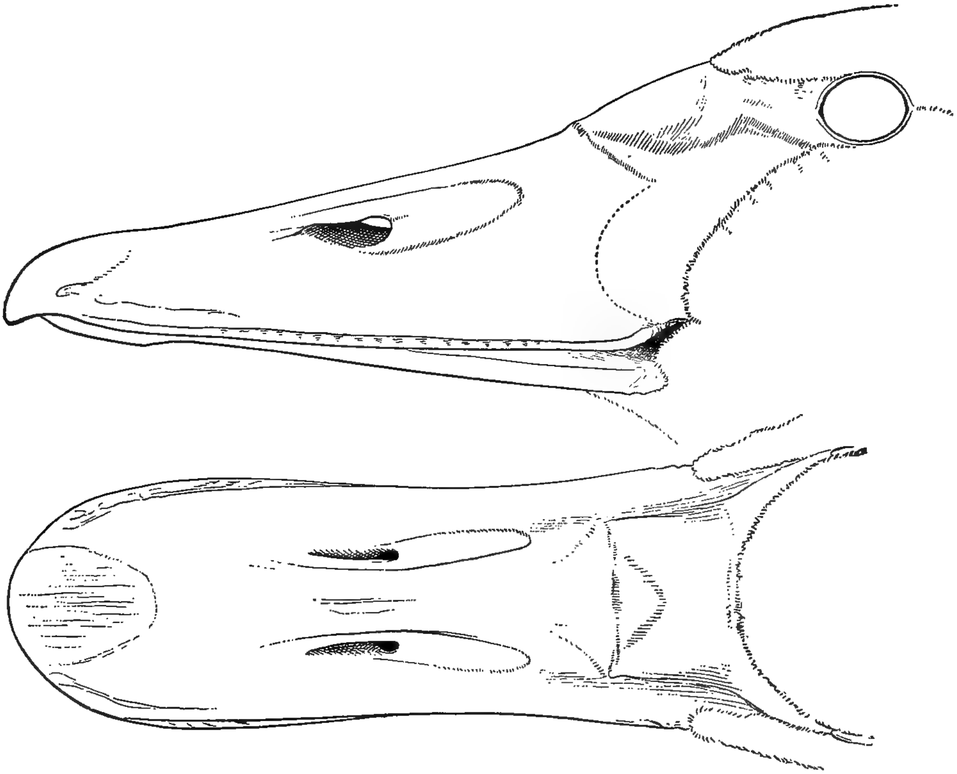


4. **Philacte** canagica.

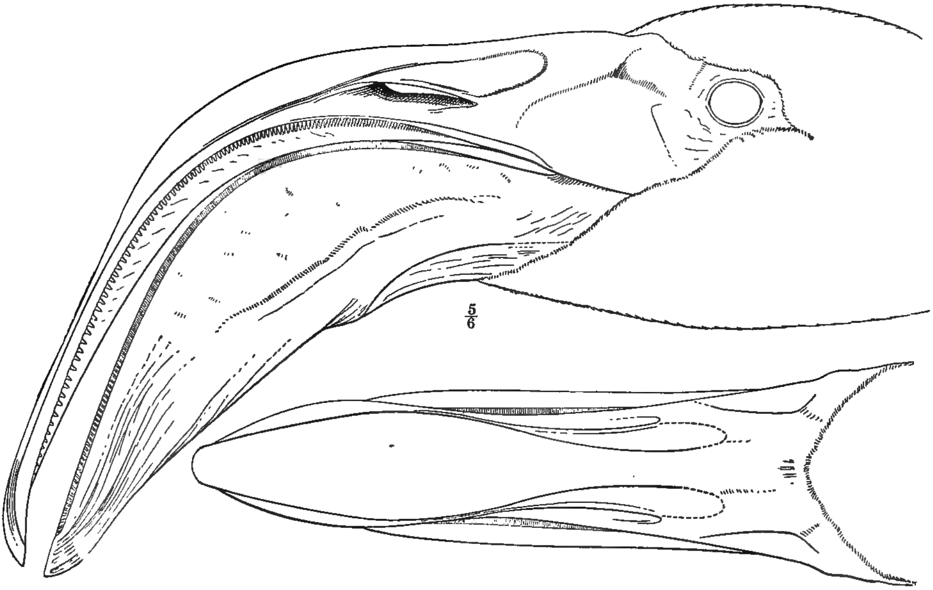


5 **Branta** minima.

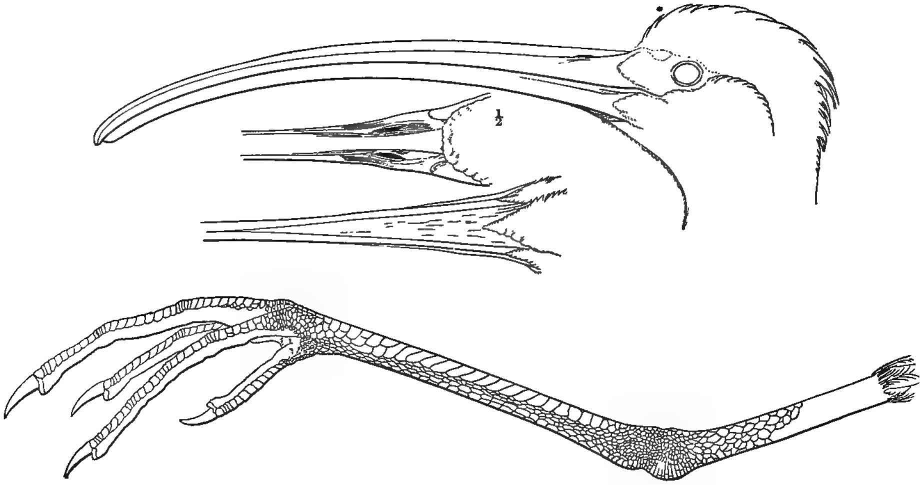
Plate **XXIX.**



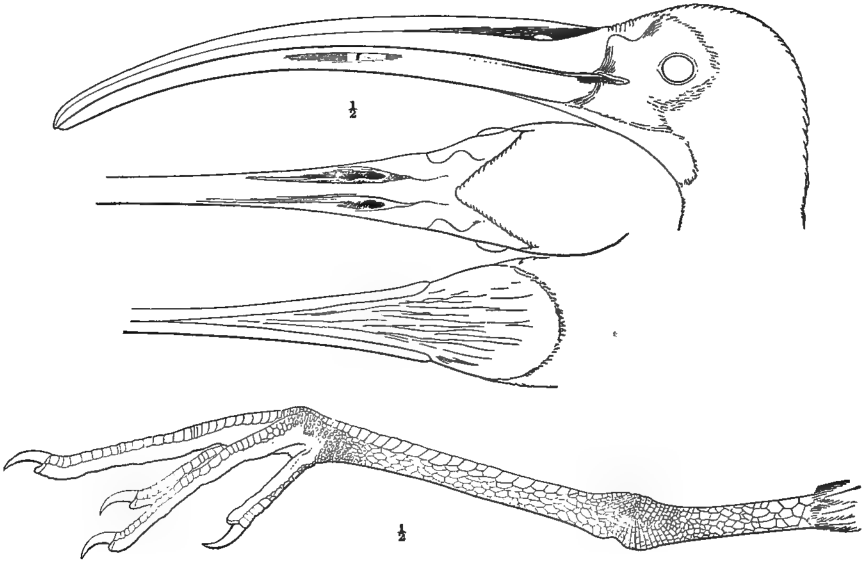
1. **Olor** columbianus.



2. **Phœnicopterus** ruber.

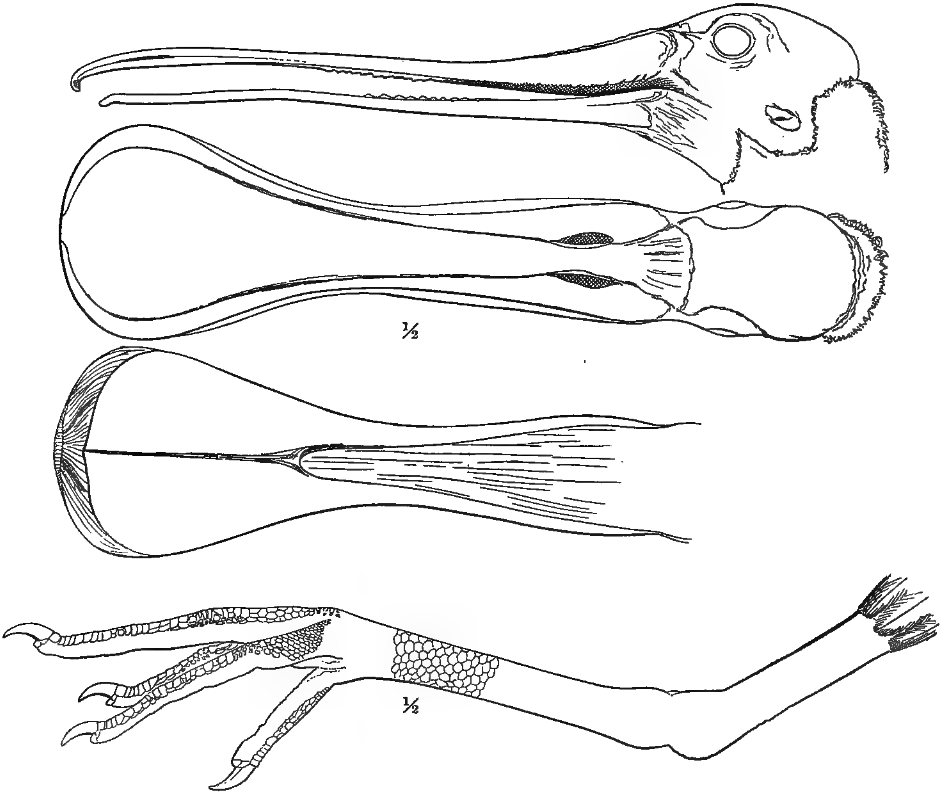


1. **Plegadis** guarauna.

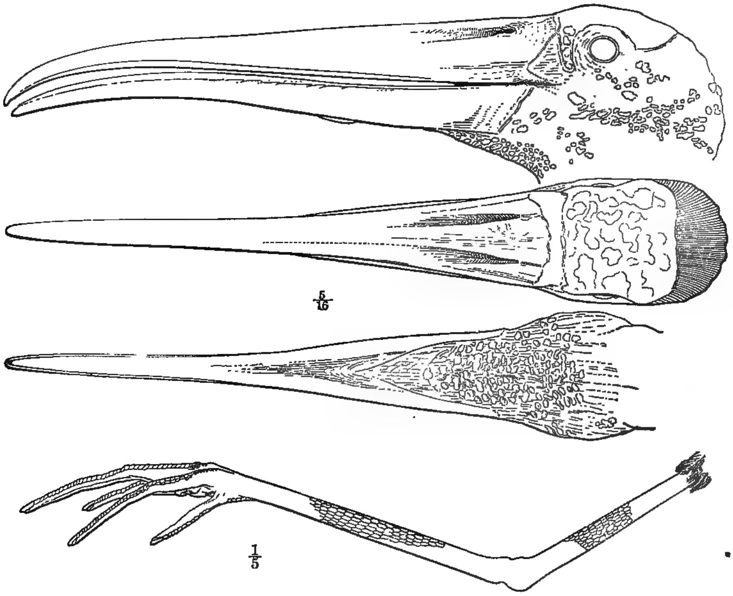


2. **Guara** rubra.

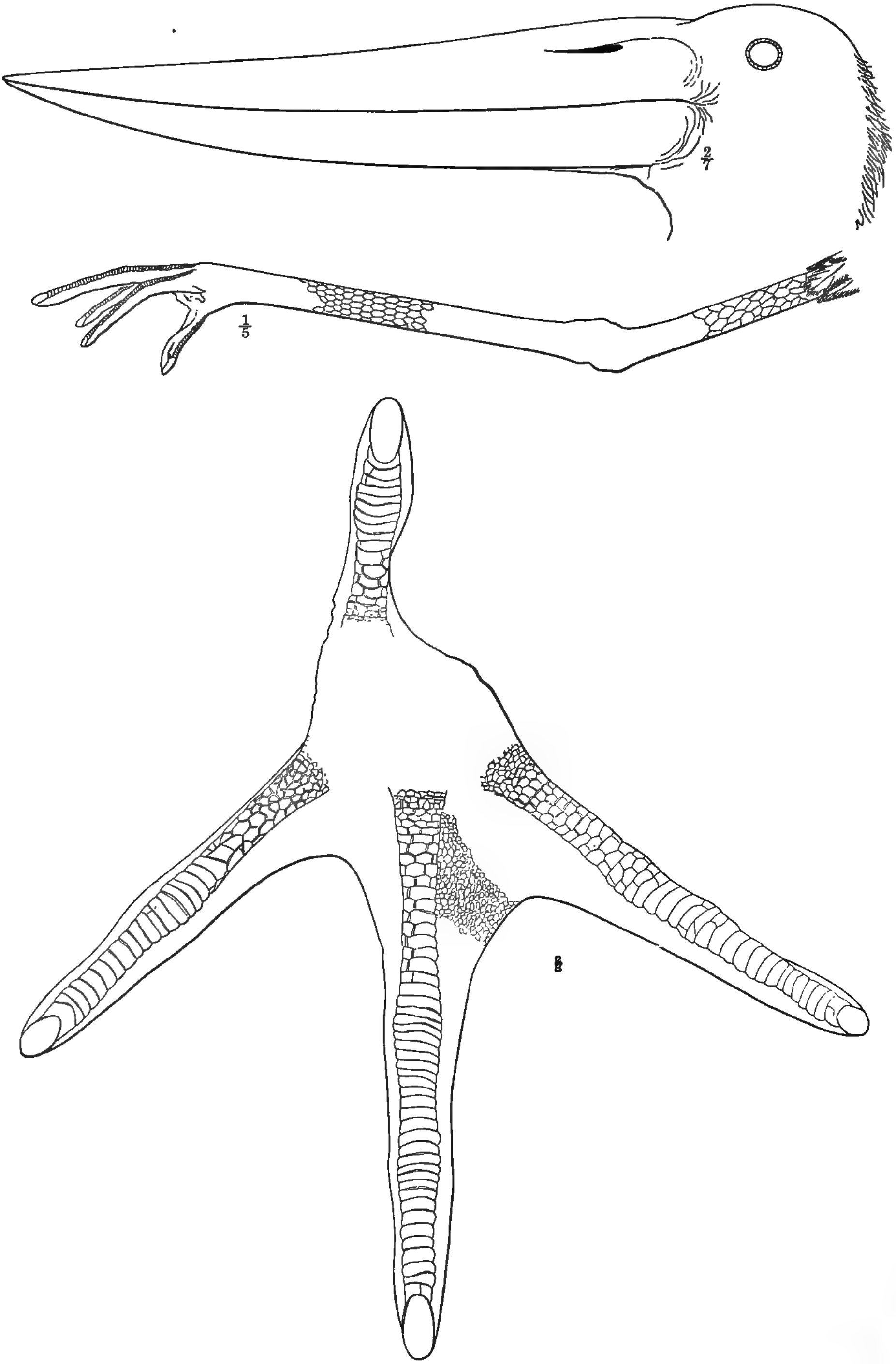
Plate XXXI.



1. **Ajaja** ajaja.

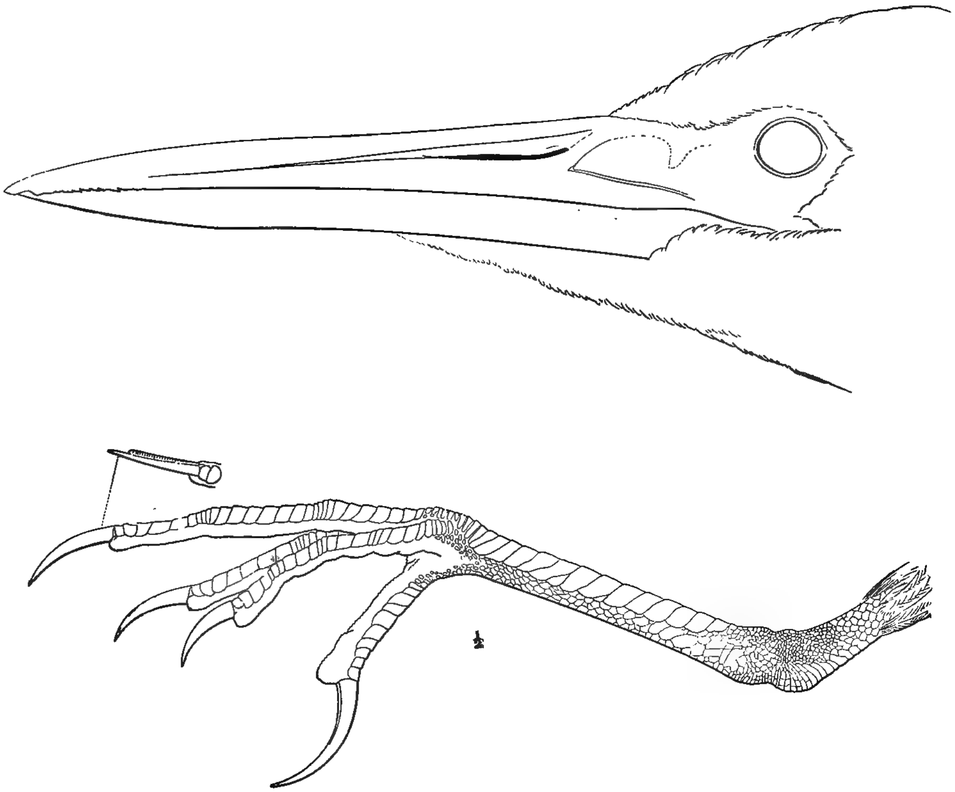


2. **Tantalus** loculator.

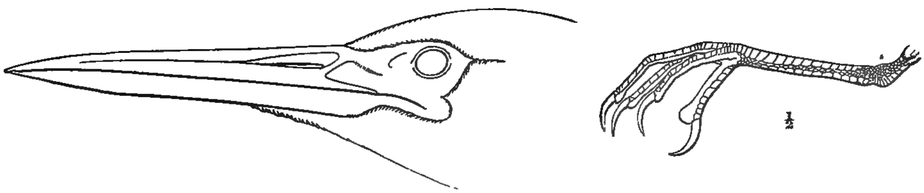


1. Mycteria americana.

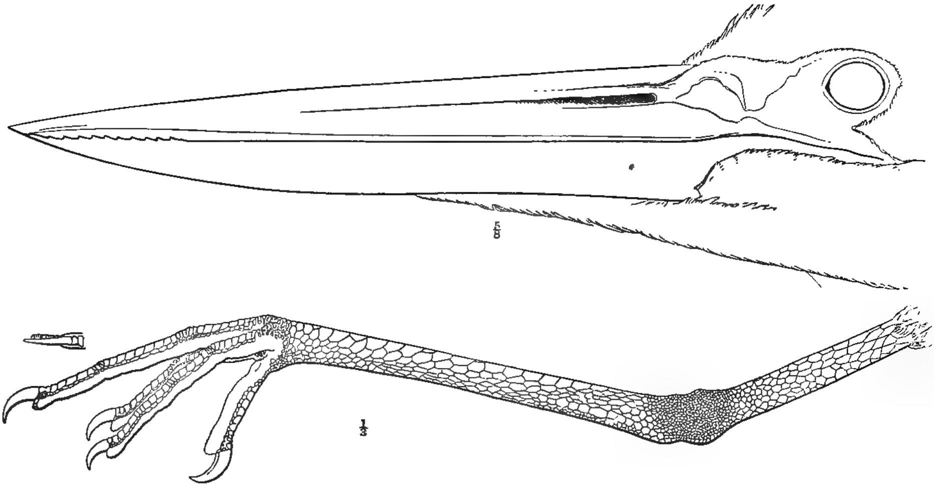
Plate XXXIII.



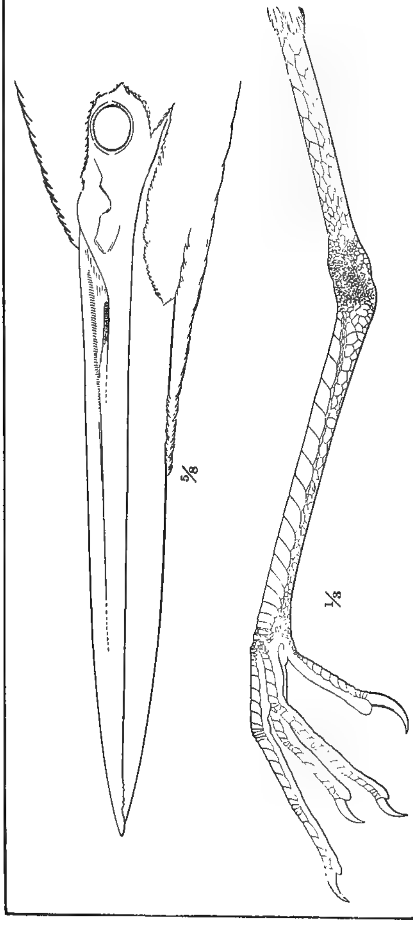
1. **Botaurus** lentiginosus.



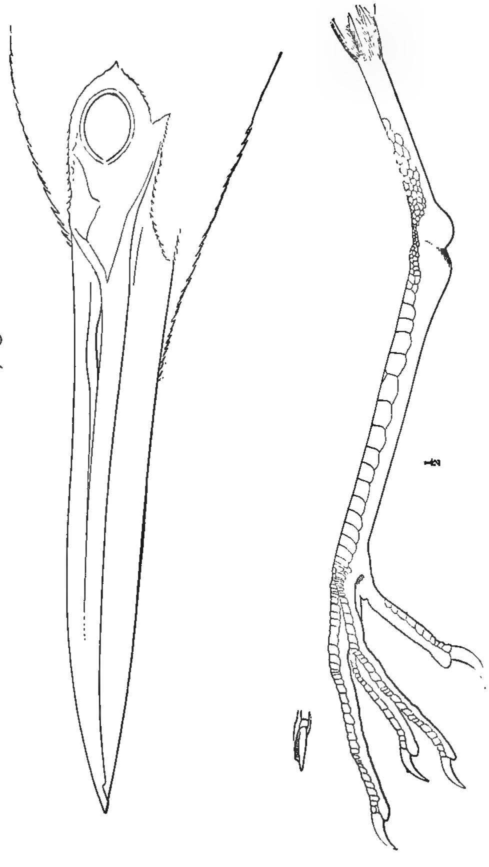
2. Botaurus (**Ardetta**) exilis.



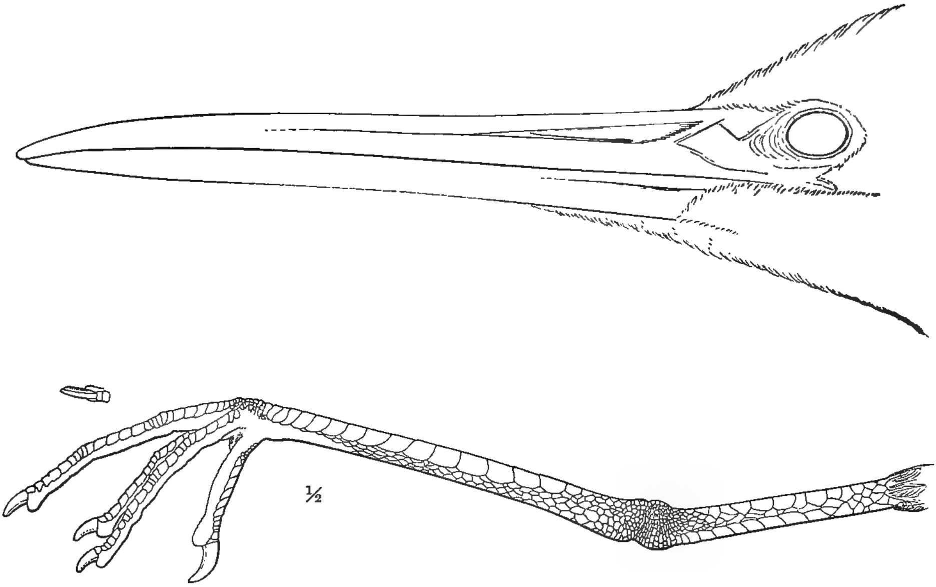
1. **Ardea** herodias.



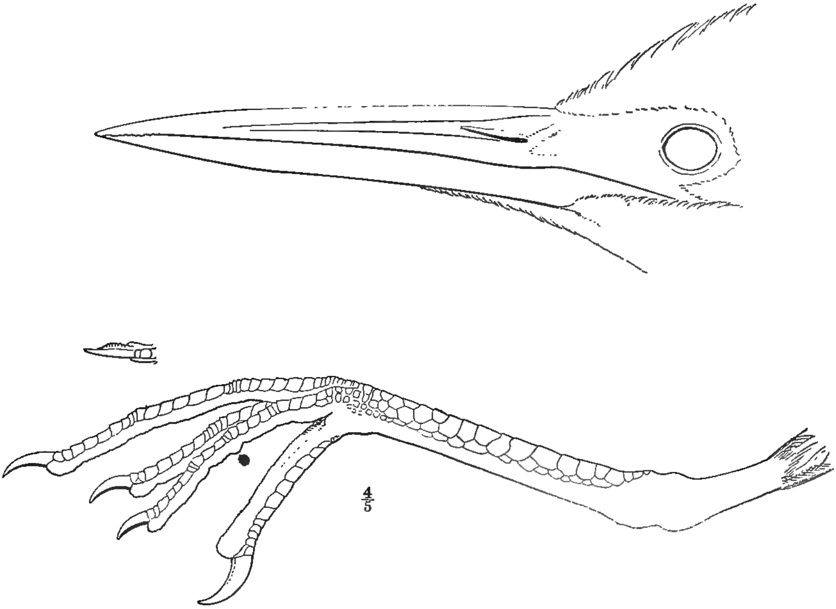
2. Ardea (**Herodias**) egretta.



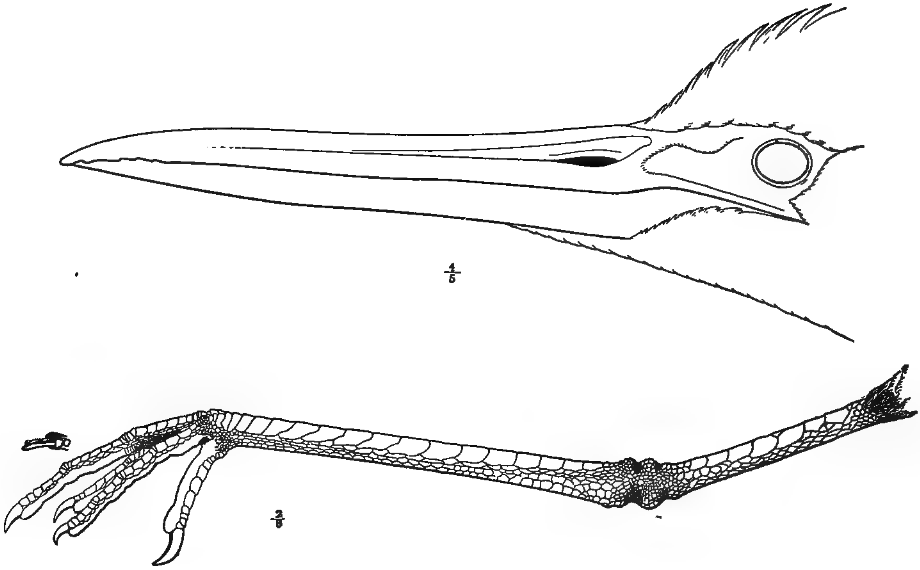
3. Ardea (**Florida**) cærulea.



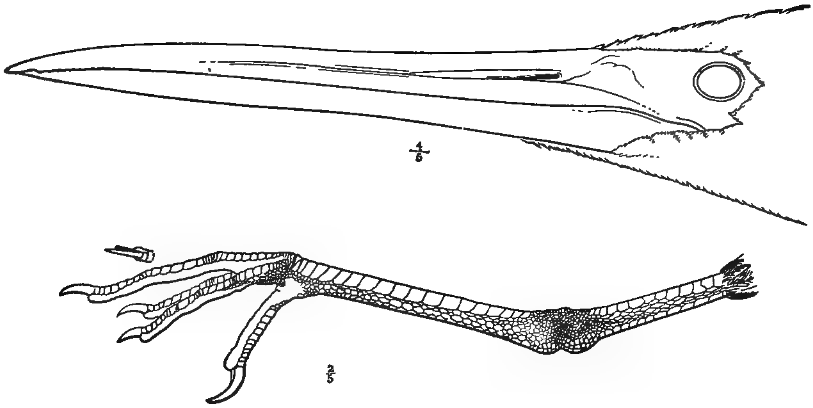
1. Ardea (**Garzetta**) candidissima.



2. Ardea (**Butorides**) virescens.

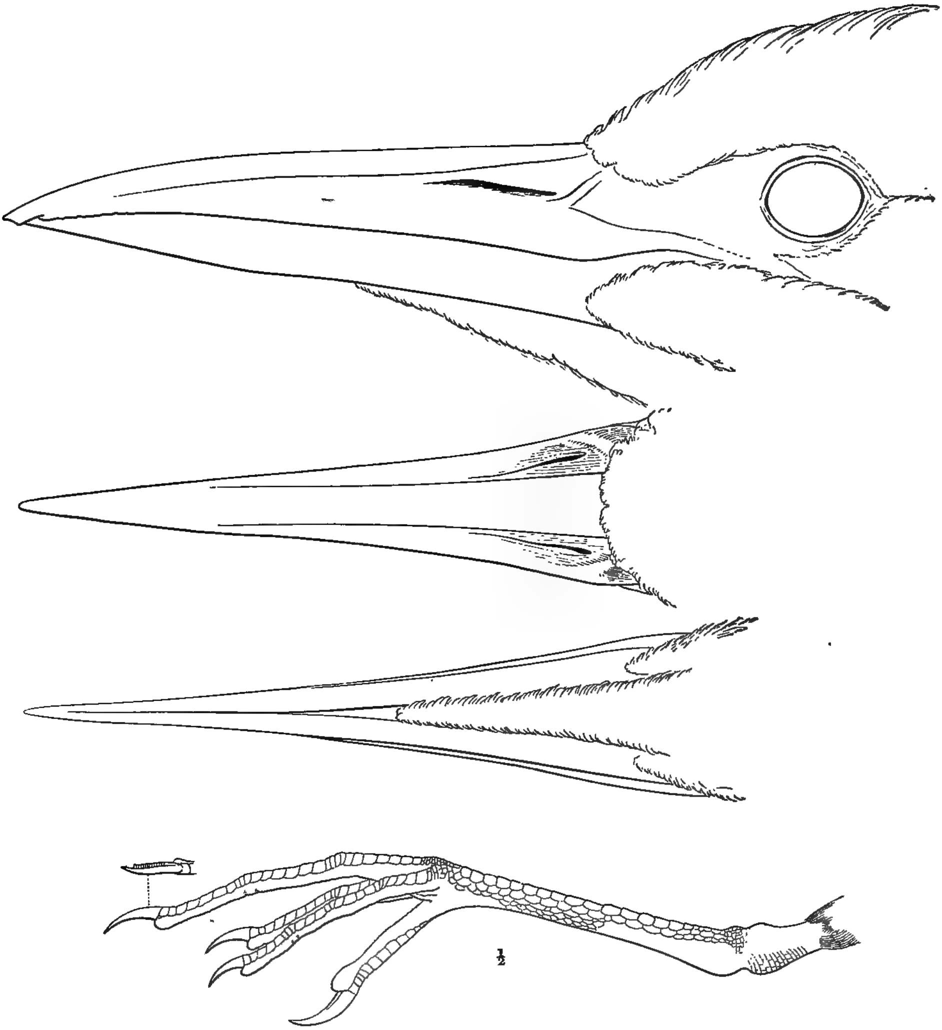


1. Ardea (**Dichromanassa**) rufa.

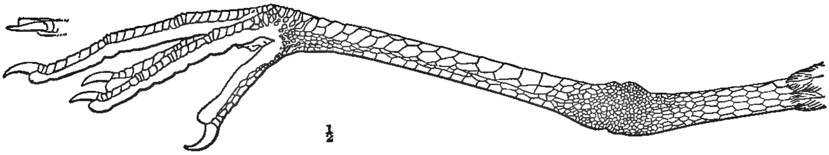


2. Ardea (**Hydranassa**) ruficollis.

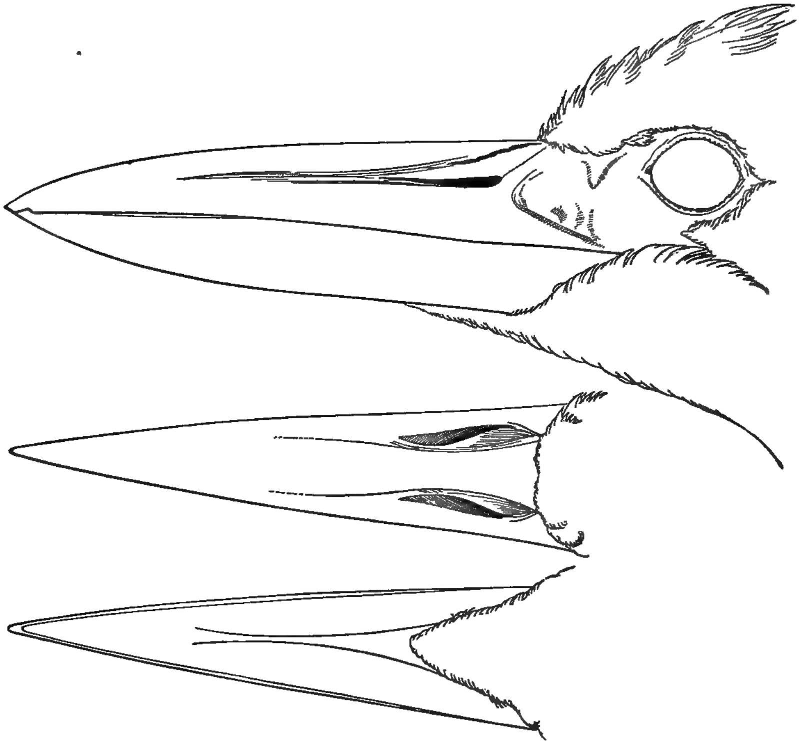
Plate XXXVII.



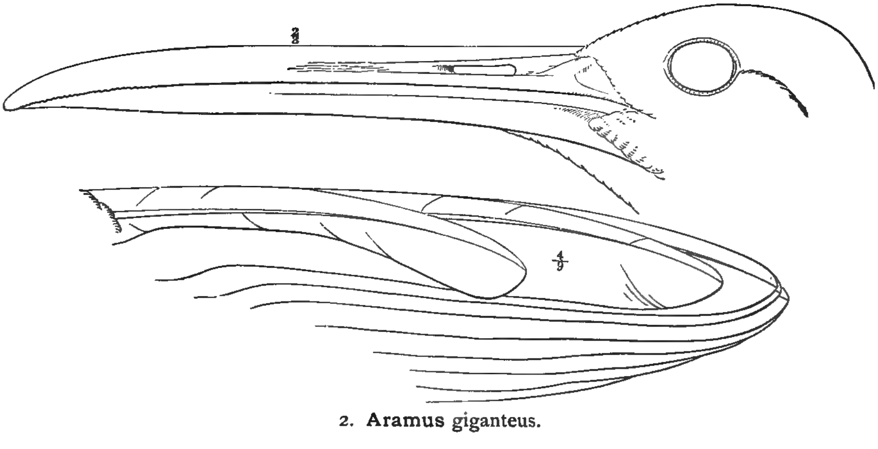
1. **Nycticorax** nævius.



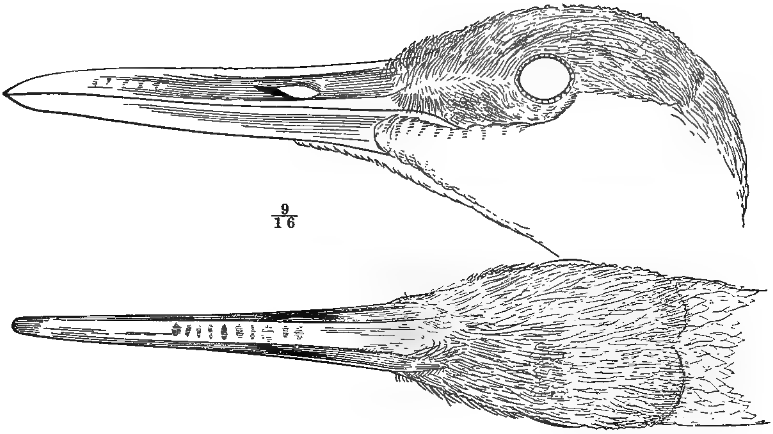
2 Nycticorax (**Nyctherodius**) violaceus.



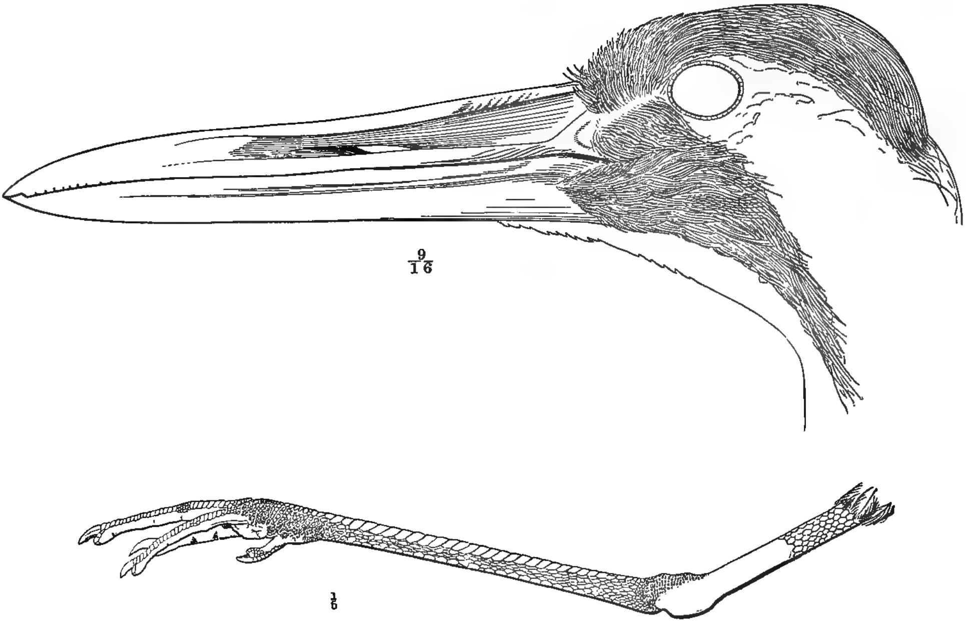
1. Nycticorax (**Nyctherodius**) violaceus.



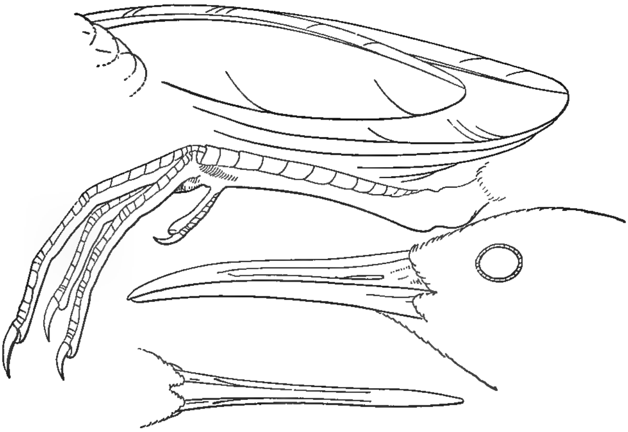
2. **Aramus** giganteus.



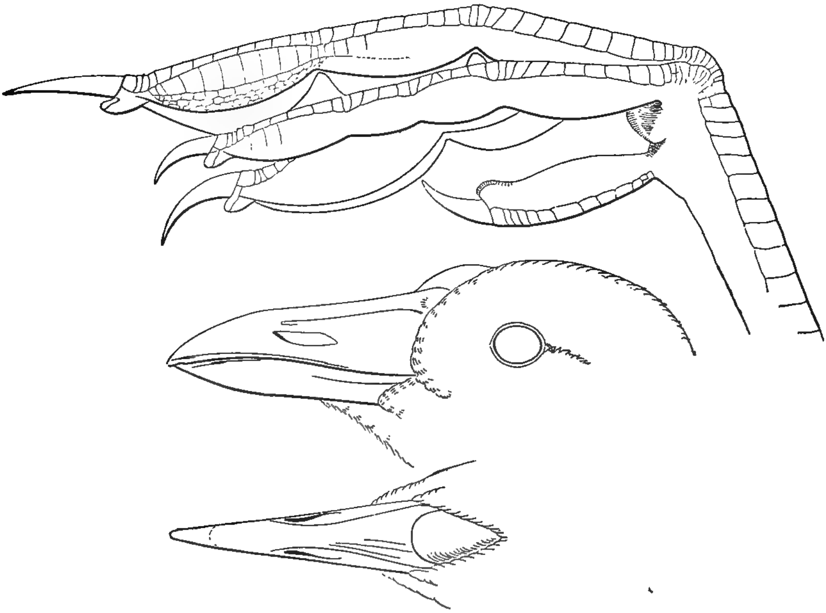
1. **Grus** canadensis.



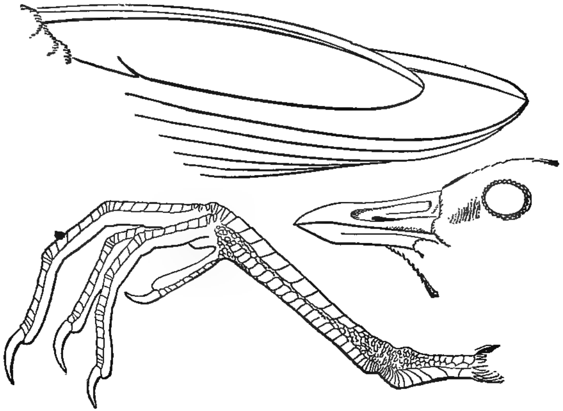
2. **Grus** americana.



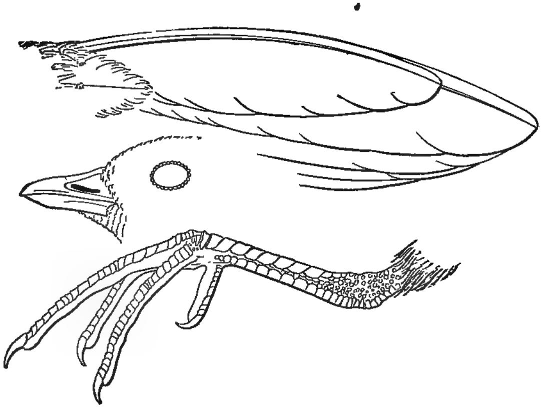
1. **Rallus** virginianus.



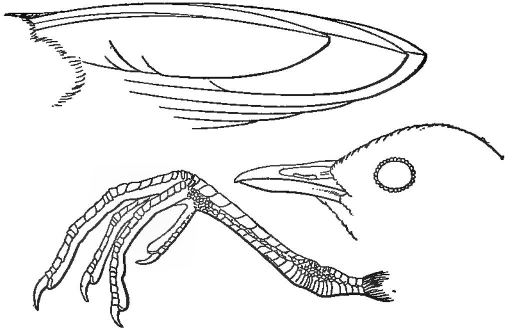
2. **Fulica** americana.



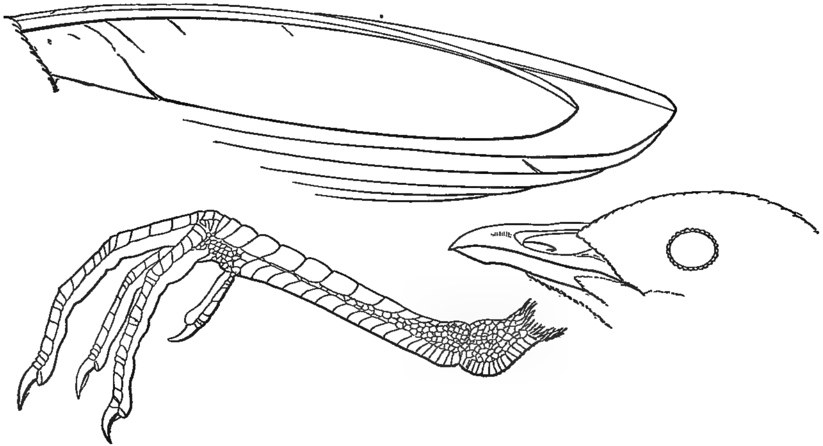
1. **Porzana** carolina.



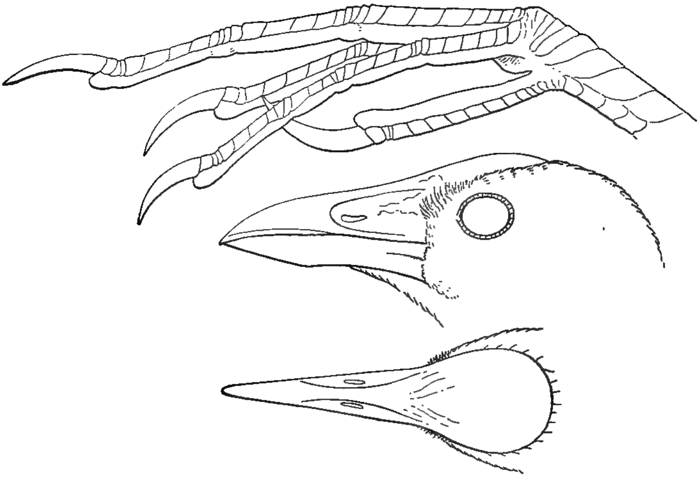
2. Porzana (**Coturnicops**) noveboracensis.



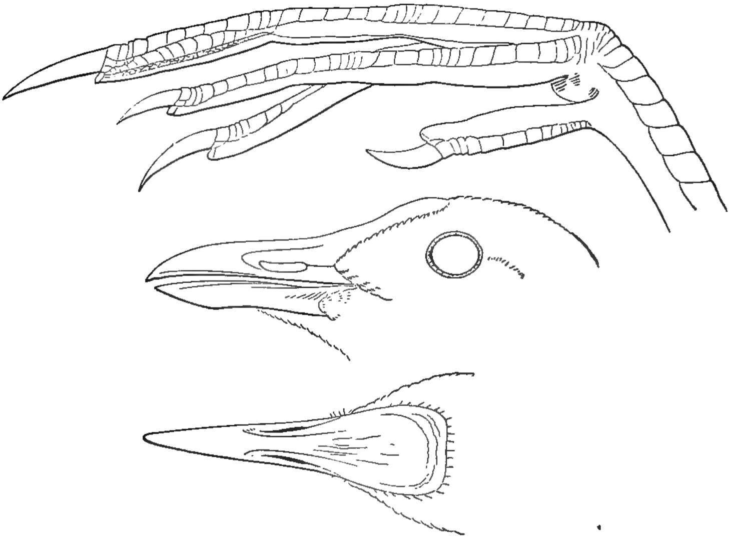
3. Porzana (**Creciscus**) jamaicensis.



4. **Crex** crex.

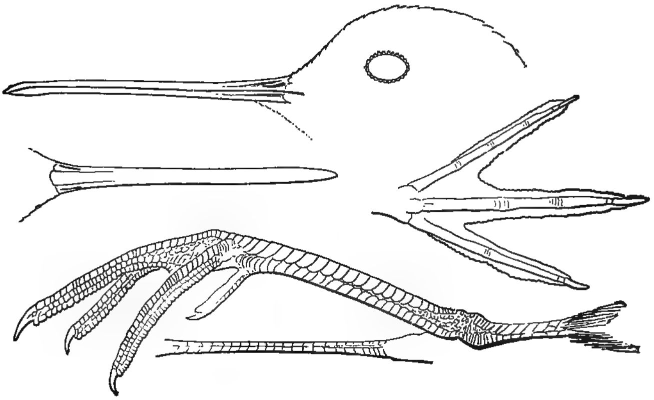


1. **Ionornis** martinica.

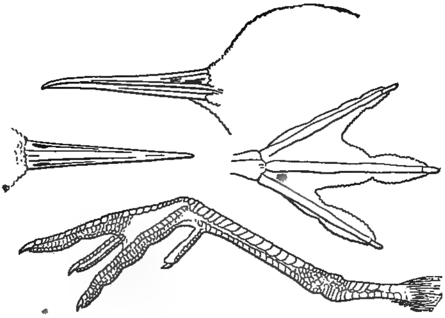


2. **Gallinula** galeata.

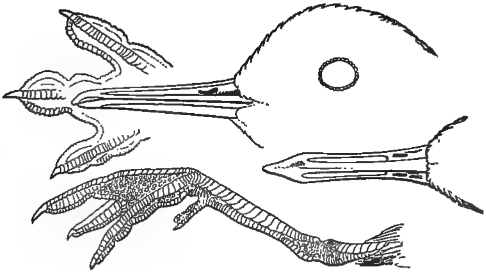
Plate XLIII.



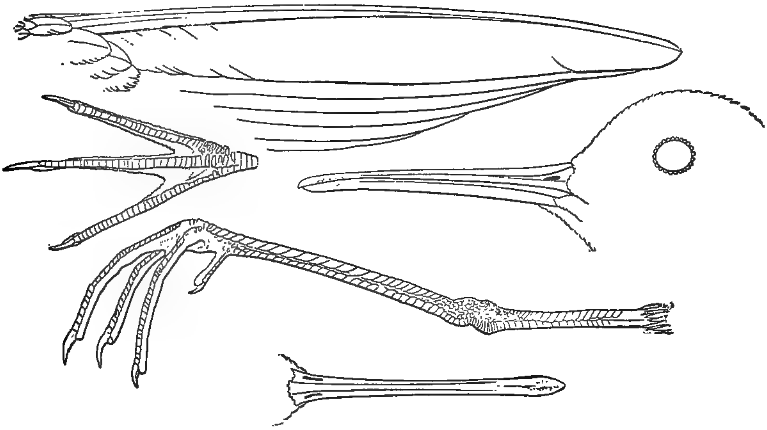
1. Phalaropus (**Steganopus**) tricolor.



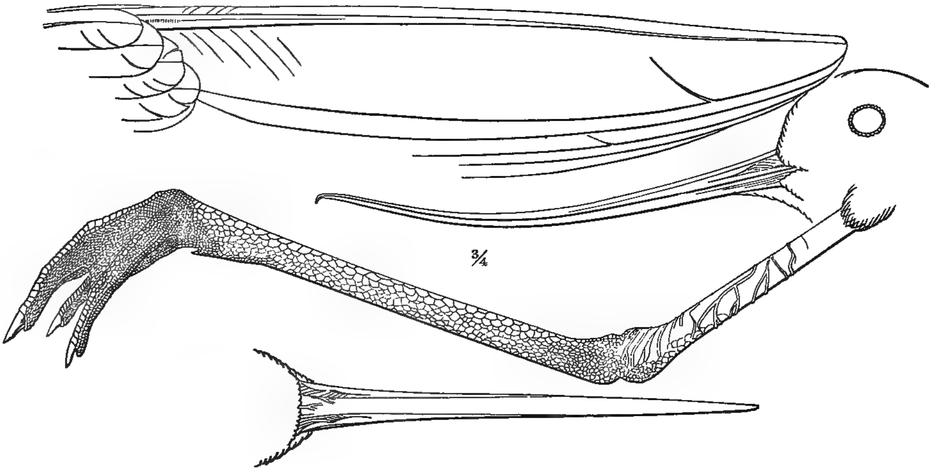
2. **Phalaropus** lobatus.



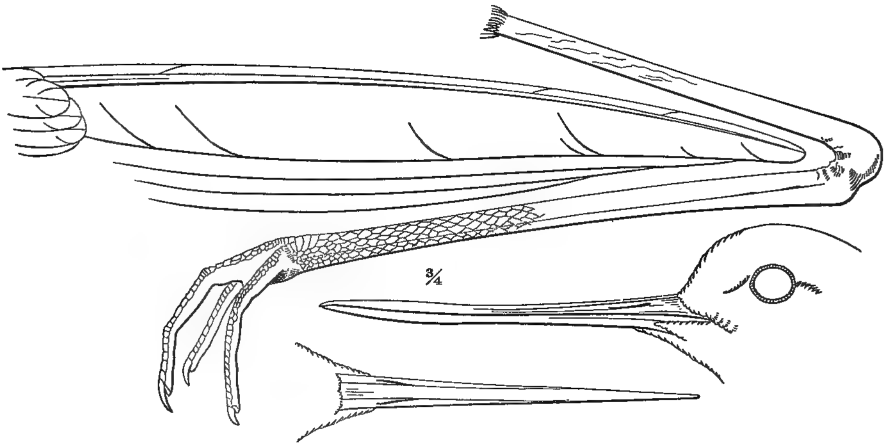
3. **Crymophilus** fulicarius.



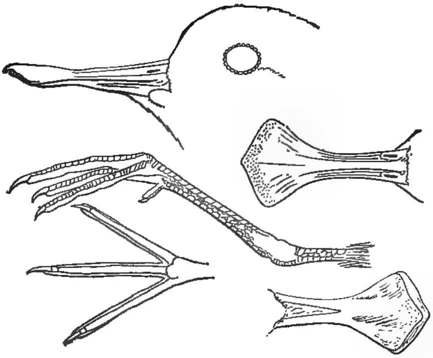
4 **Micropalama** himantopus.



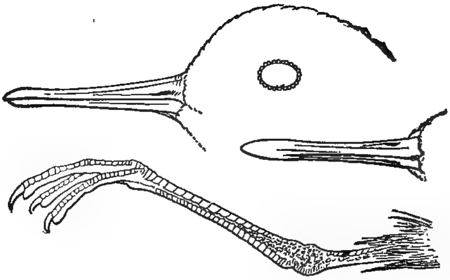
1. **Recurvirostra** americana.



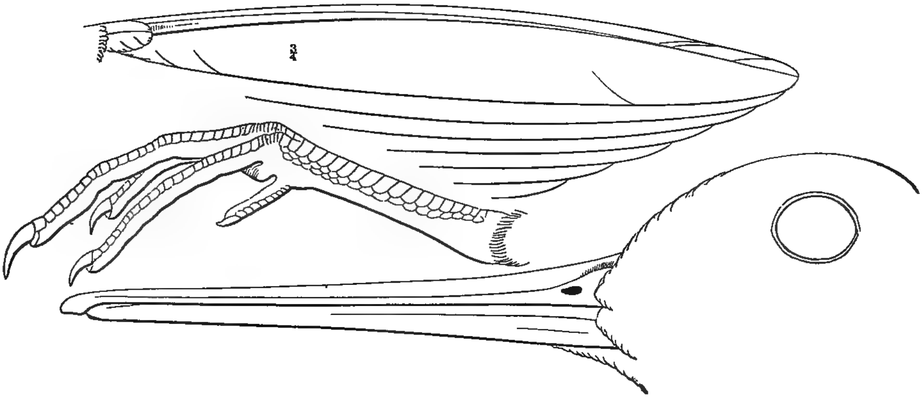
2. **Himantopus** mexicanus.



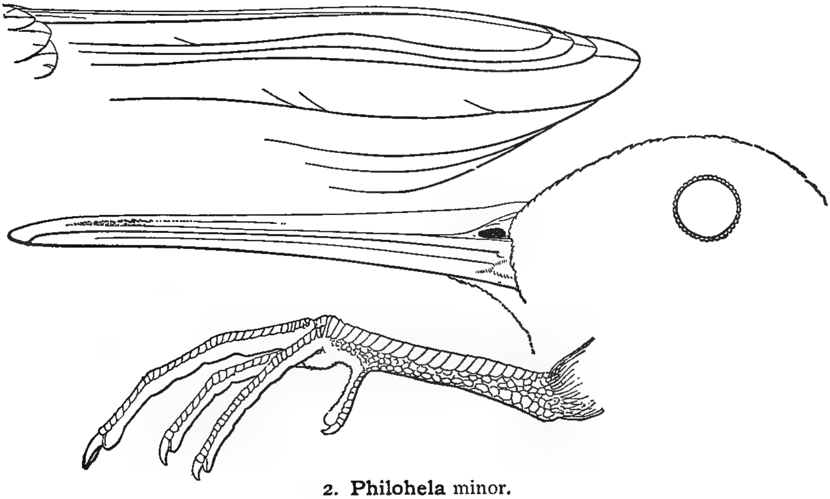
3. **Eurynorhynchus** pygmæus.



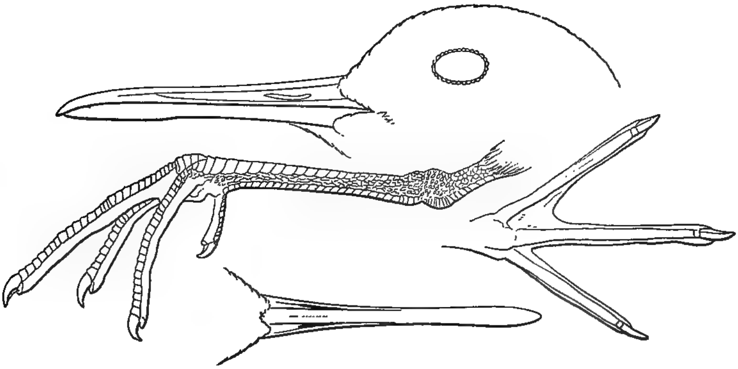
4. **Calidris** arenaria.



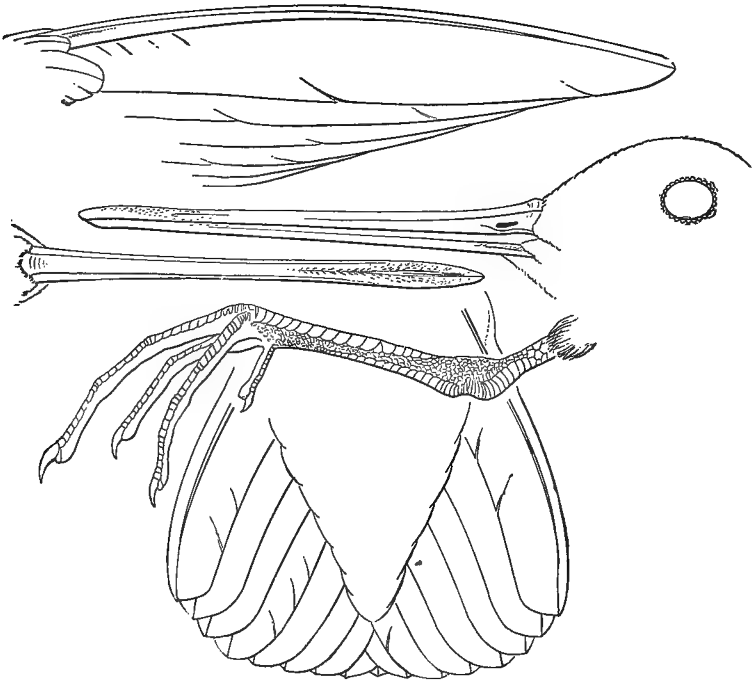
1. **Scolopax** rusticola



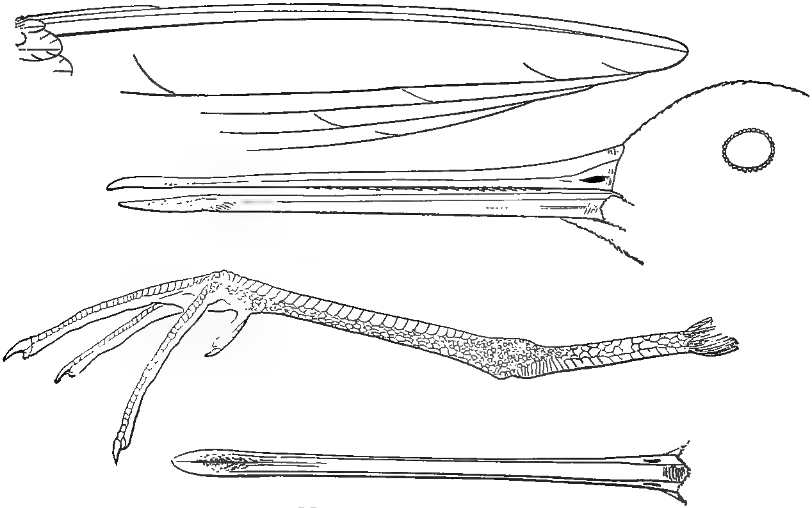
2. **Philohela** minor.



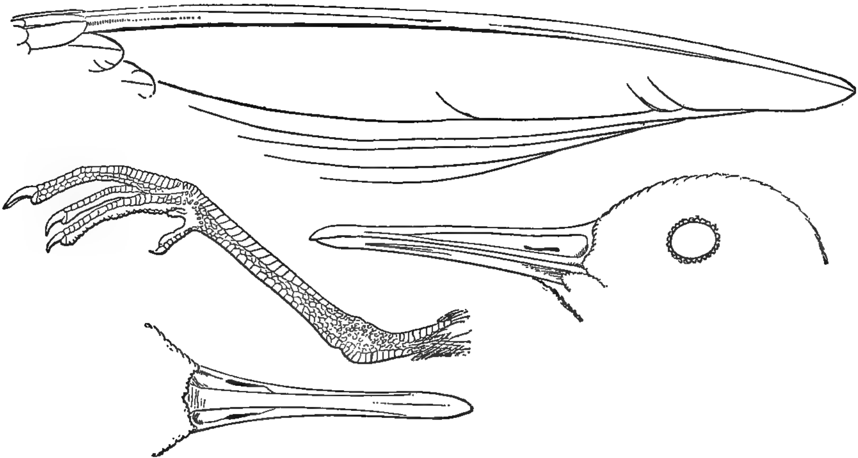
3. **Heteractitis** incanus.



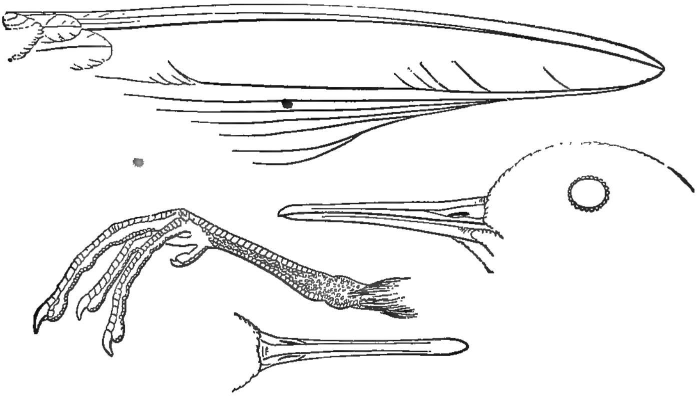
1. **Gallinago** delicata.



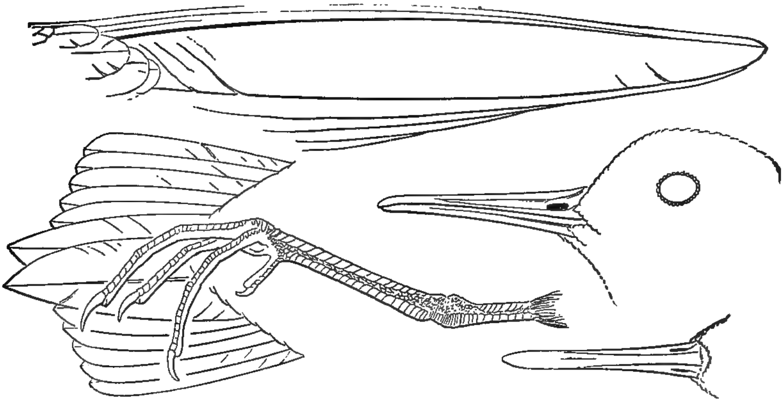
2. **Macrorhamphus** griseus.



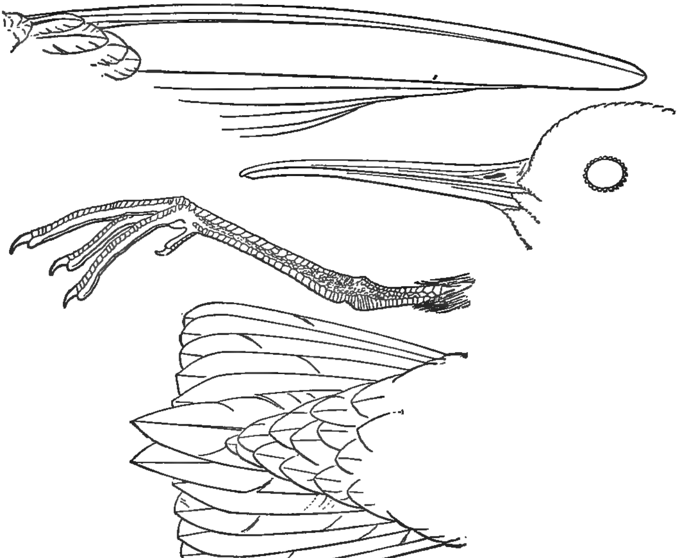
1. **Tringa** canutus.



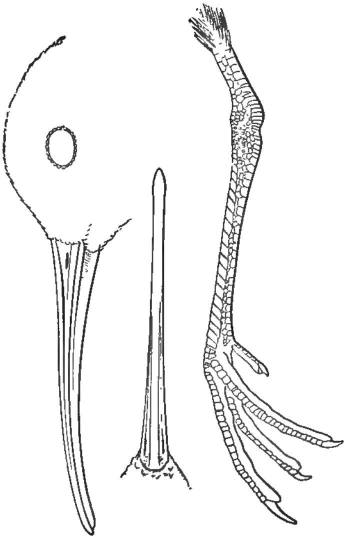
2. Tringa (**Arquatella**) maritima.



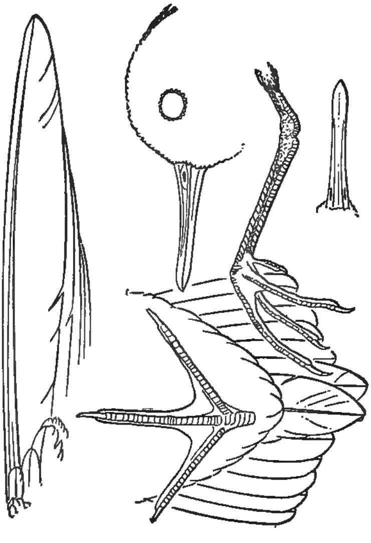
3. Tringa (**Actodromas**) maculata.



1. Tringa (**Pelidna**) pacifica.

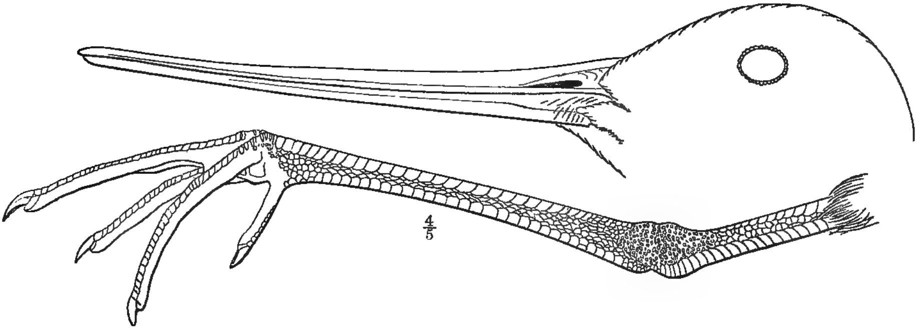


2. Tringa (**Ancylocheilus**) ferruginea.

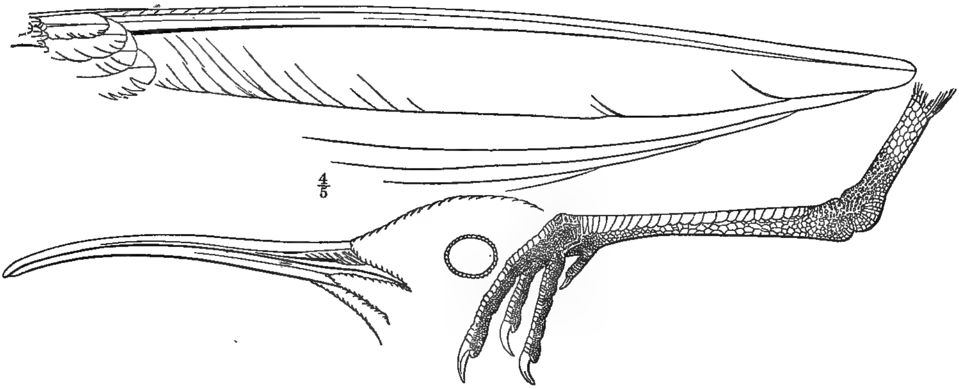


3. **Ereunetes** pusillus.

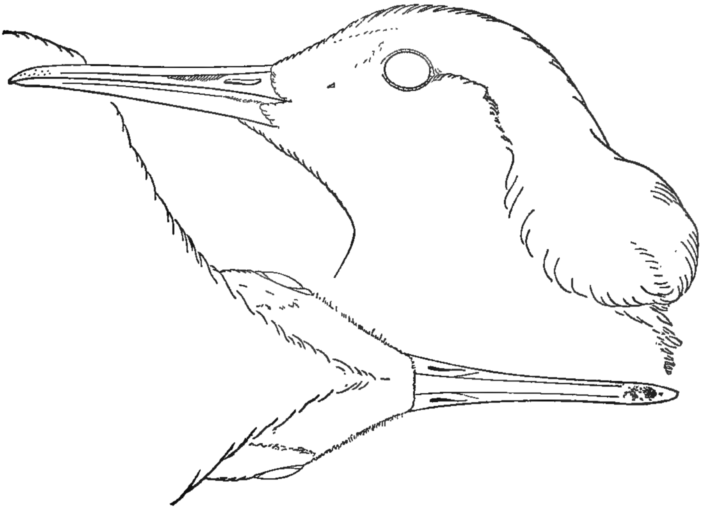
Plate XLIX.



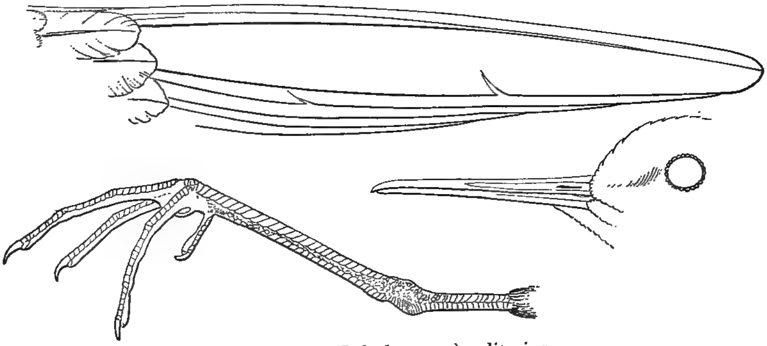
1. **Limosa** fedoa.



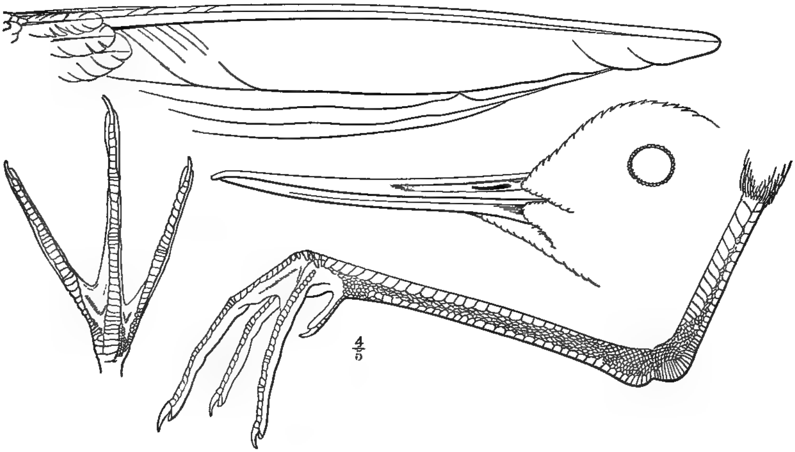
2. **Numenius** borealis.



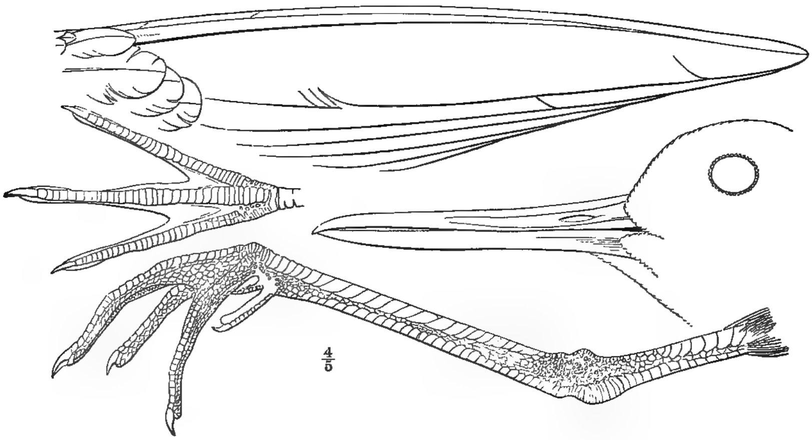
3. **Pavoncella** pugnax.



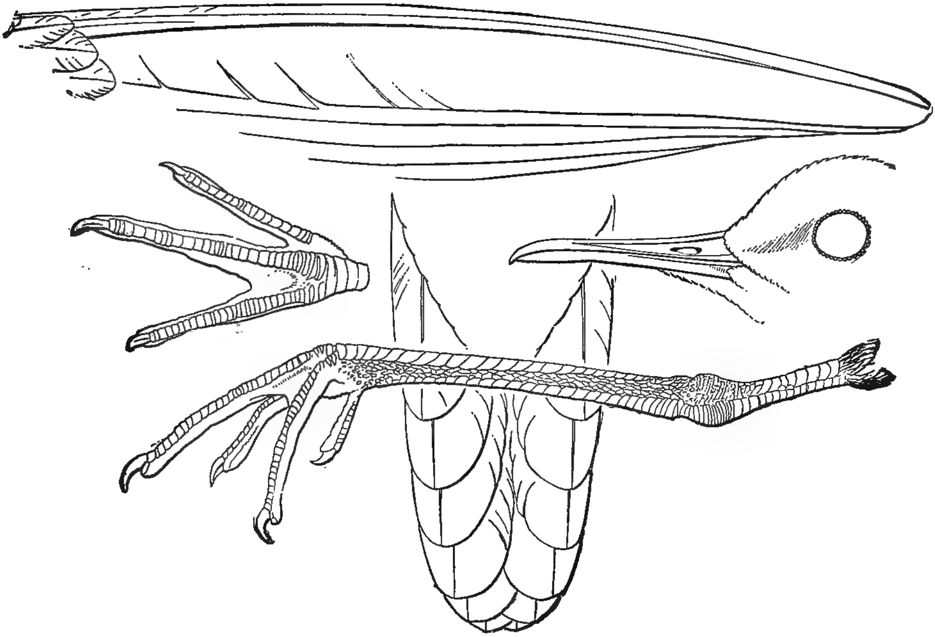
1. Totanus (**Helodromas**) solitarius.



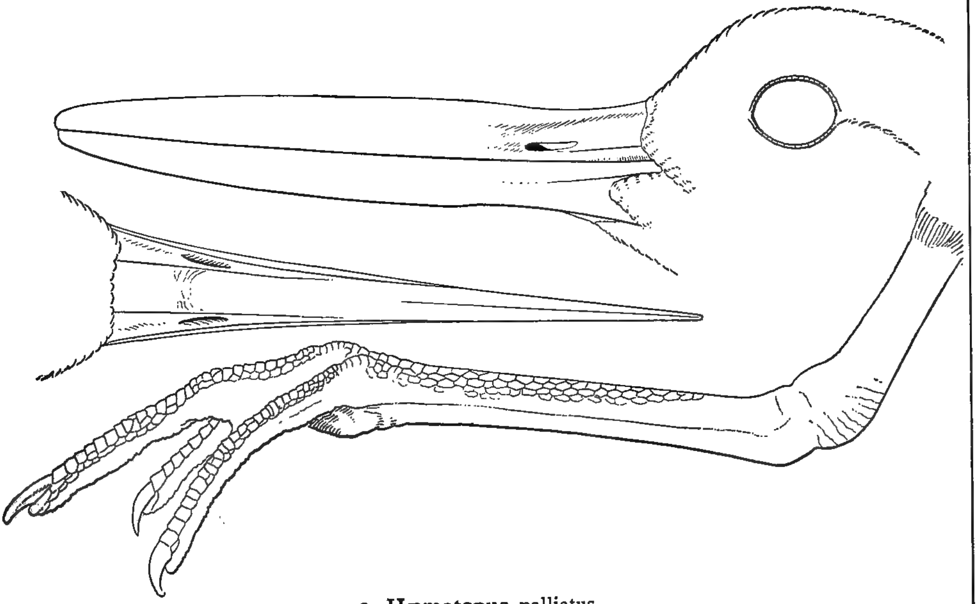
2. **Totanus** nebularius.



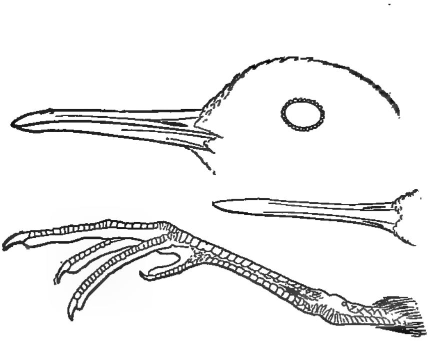
3. **Symphemia** semipalmata.



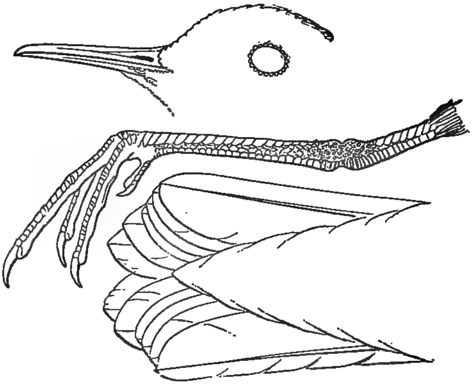
1. **Bartramia** longicauda.



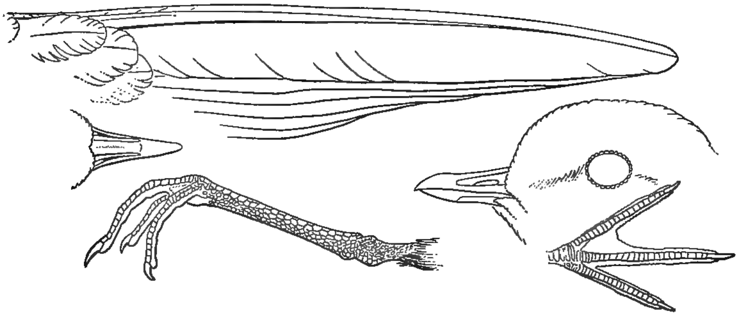
2. **Hæmatopus** palliatus.



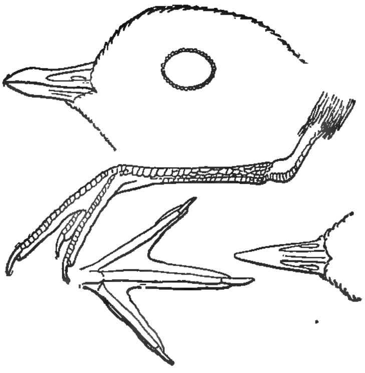
1. **Actitis** macularia.



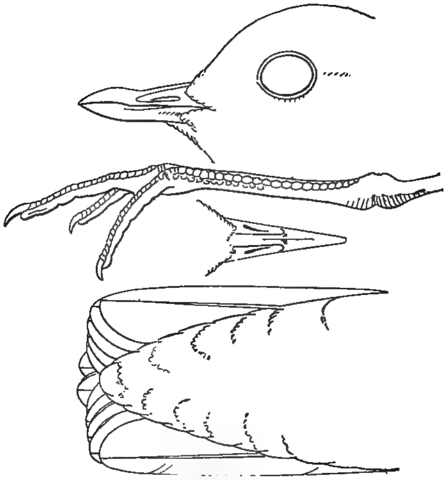
2. **Tryngites** subruficollis.



3. **Ægialitis** hiaticula.

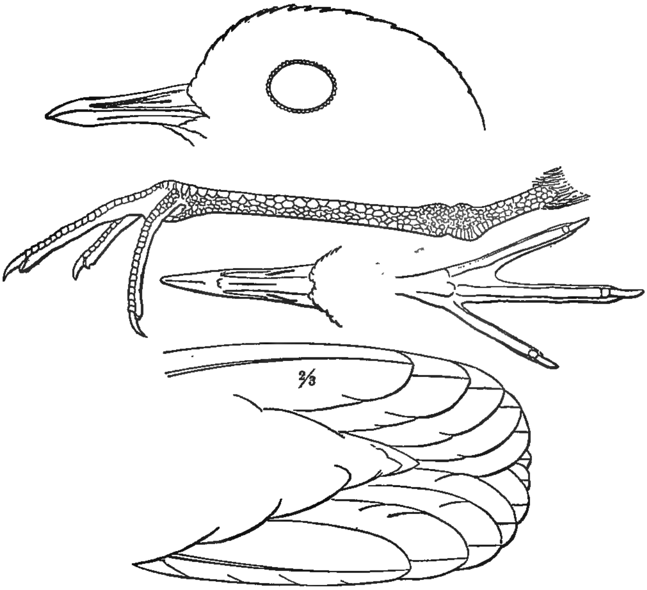


4. **Ægialitis** semipalmata.

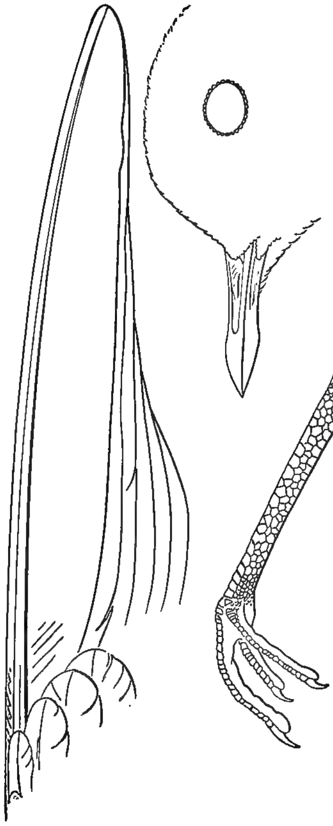


5. **Ægialitis** mongola.

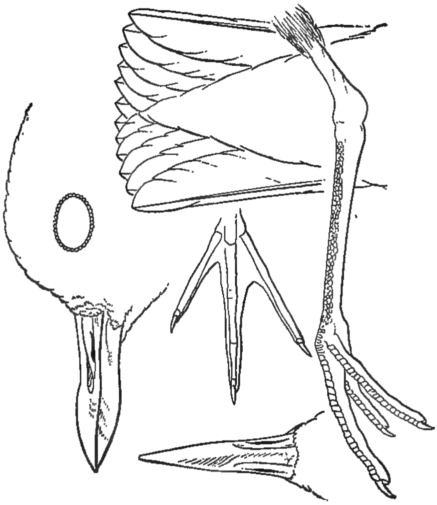
Plate LIII.



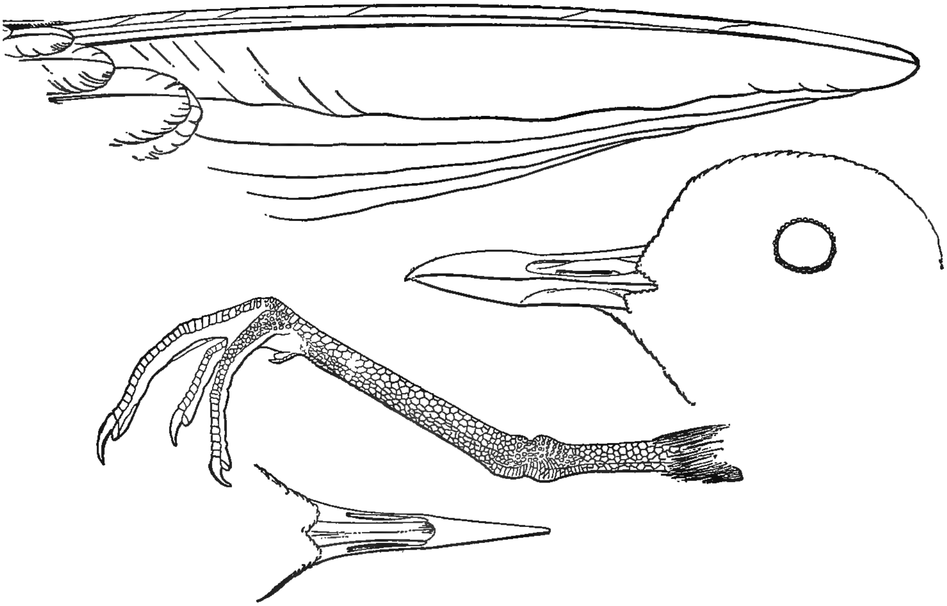
1. Ægialitis (**Oxyechus**) vocifera.



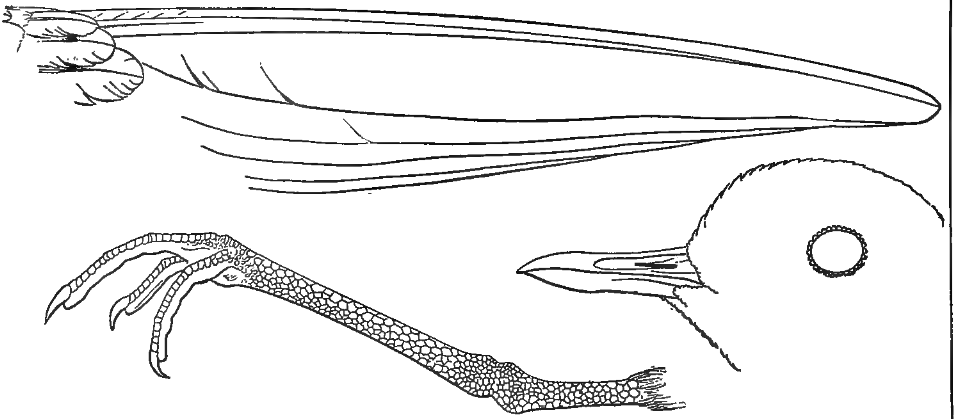
2. Ægialitis (**Podasocys**) montana.



3. Ægialitis (**Ochthodromus**) wilsonia.

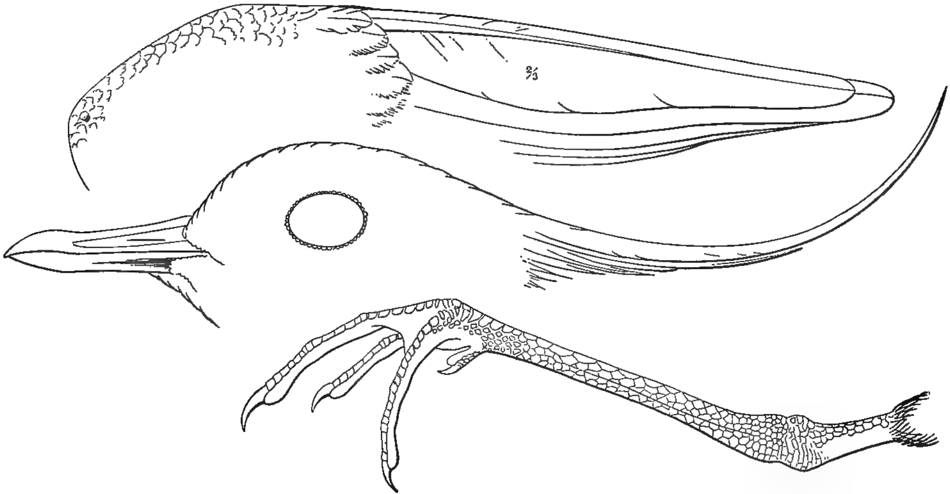


1. Charadrius (**Squatarola**) squatarola.

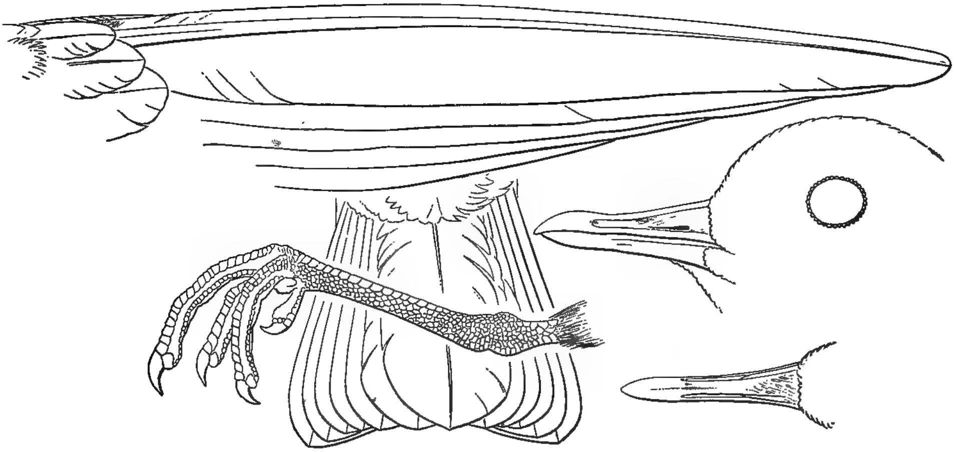


2. **Charadrius** dominicus.

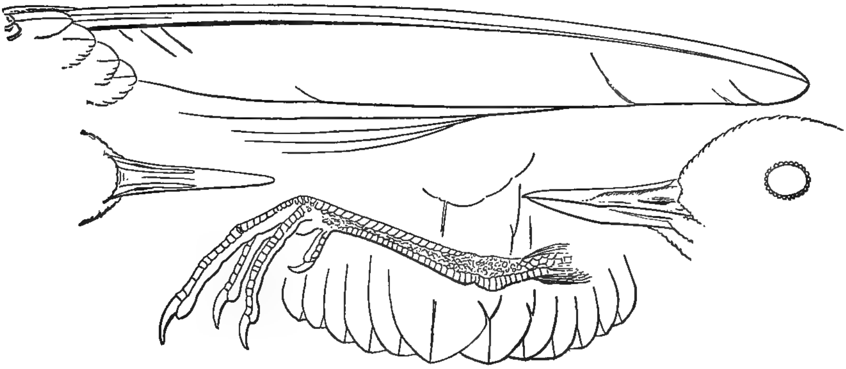
Plate LV.



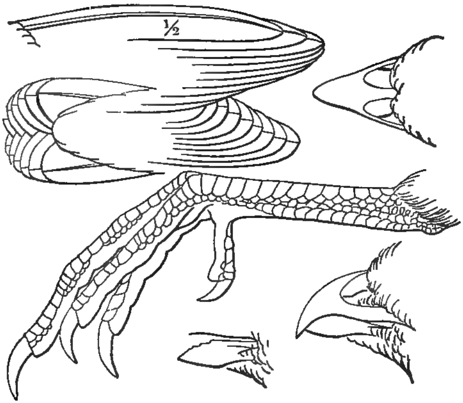
1. Vanellus vanellus.



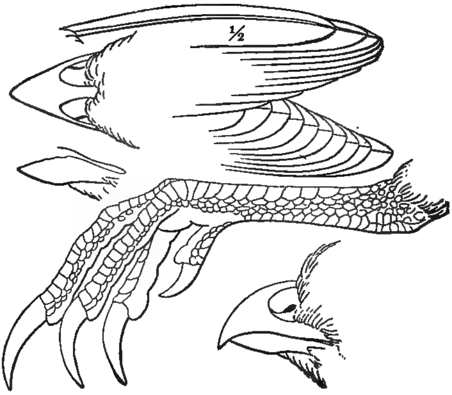
2. Aphriza virgata.



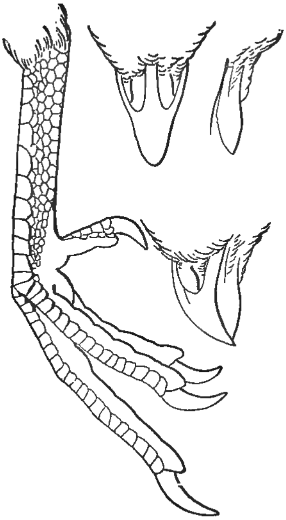
3. Arenaria interpres.



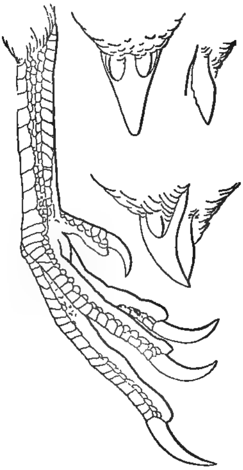
1. **Colinus** virginianus.



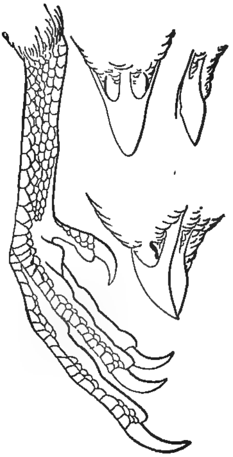
2. **Cyrtonyx** montezumæ.



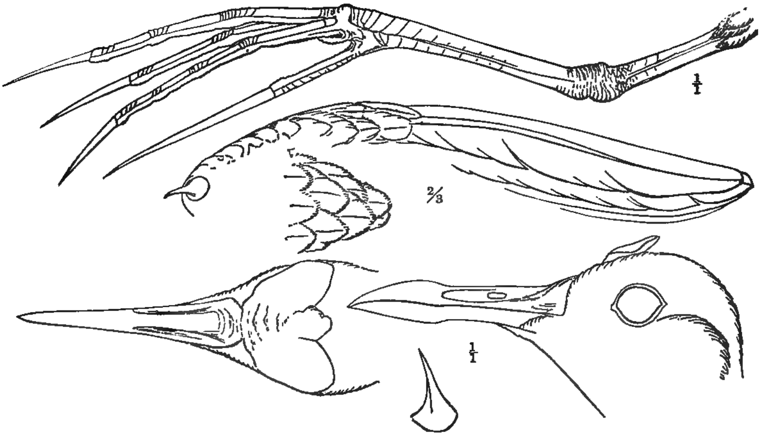
3. **Oreortyx** pictus.



4. Callipepla (**Lophortyx**) californica.

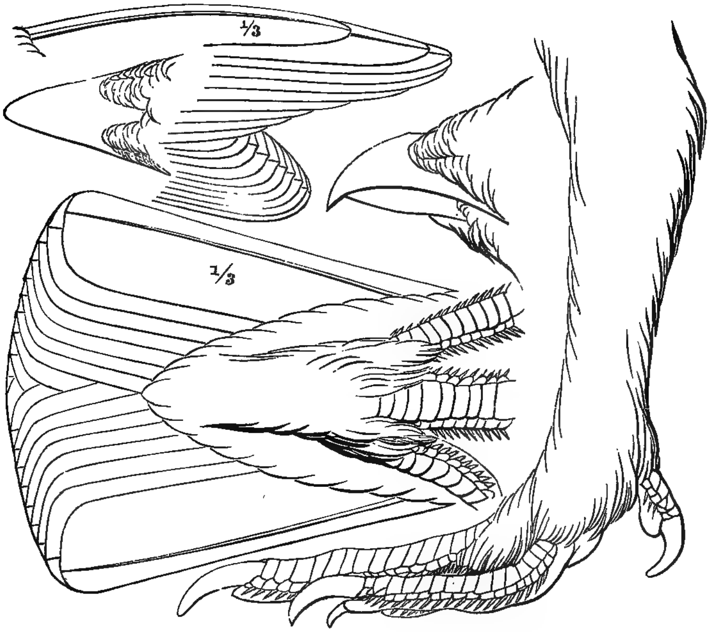


5. **Callipepla** squamata.

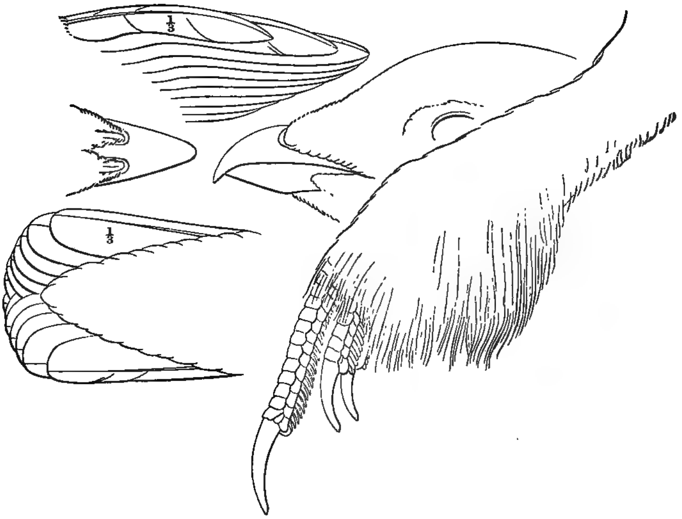


6. **Jacana** gymnostoma.

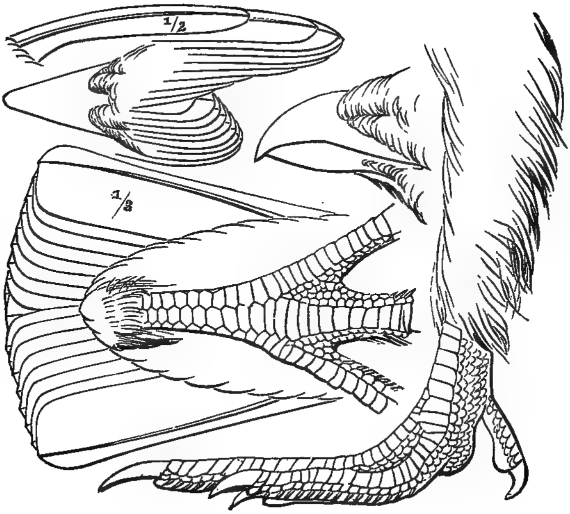
Plate LVII.



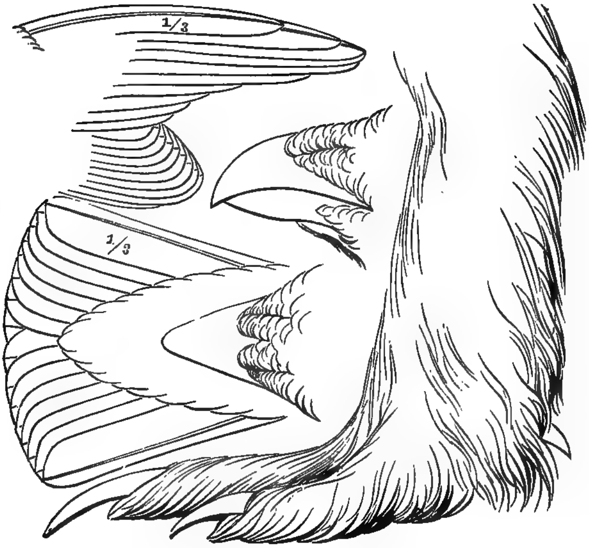
1. **Dendragapus** obscurus.



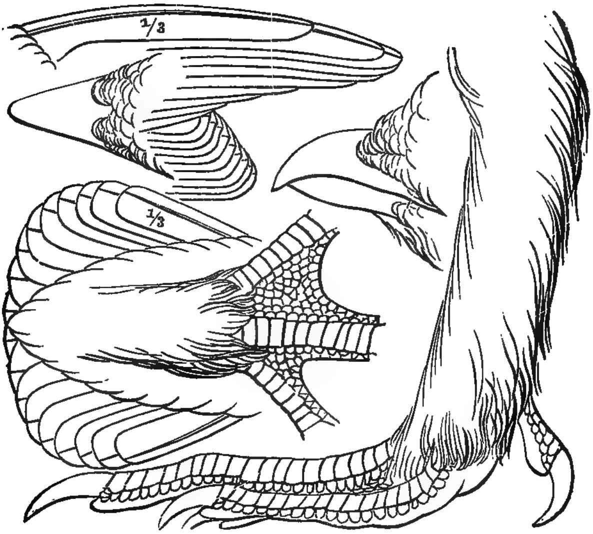
2. Dendragapus (**Canachites**) canadensis.



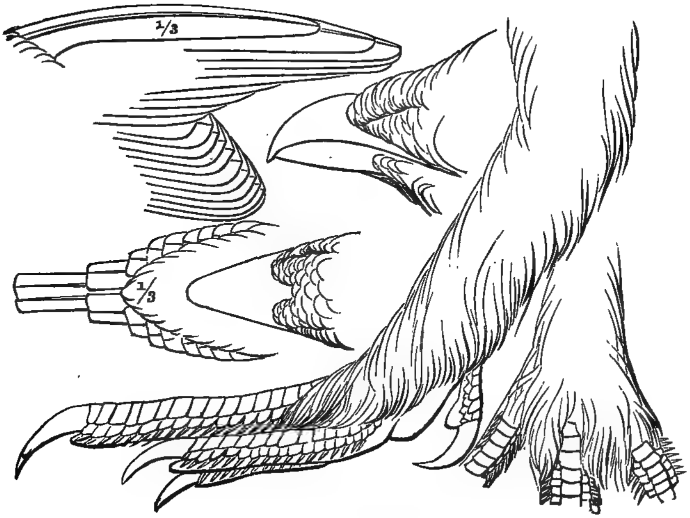
1. Bonasa umbellus.



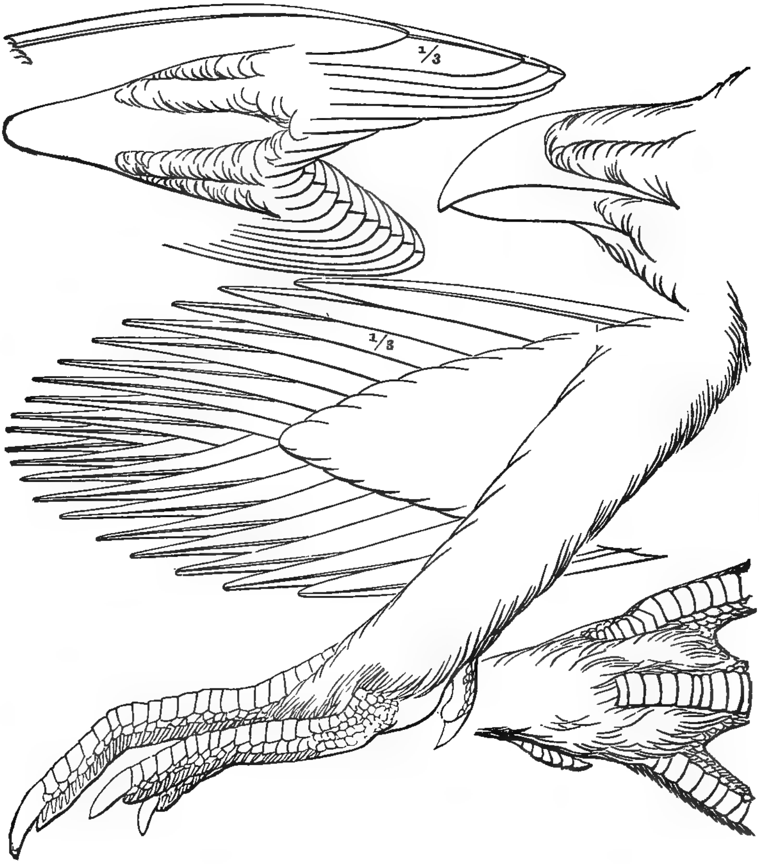
2. Lagopus lagopus.



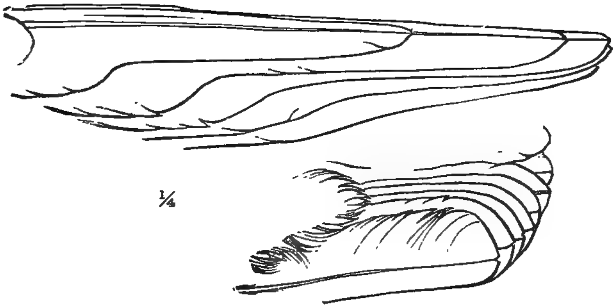
1. **Tympanuchus** americanus.



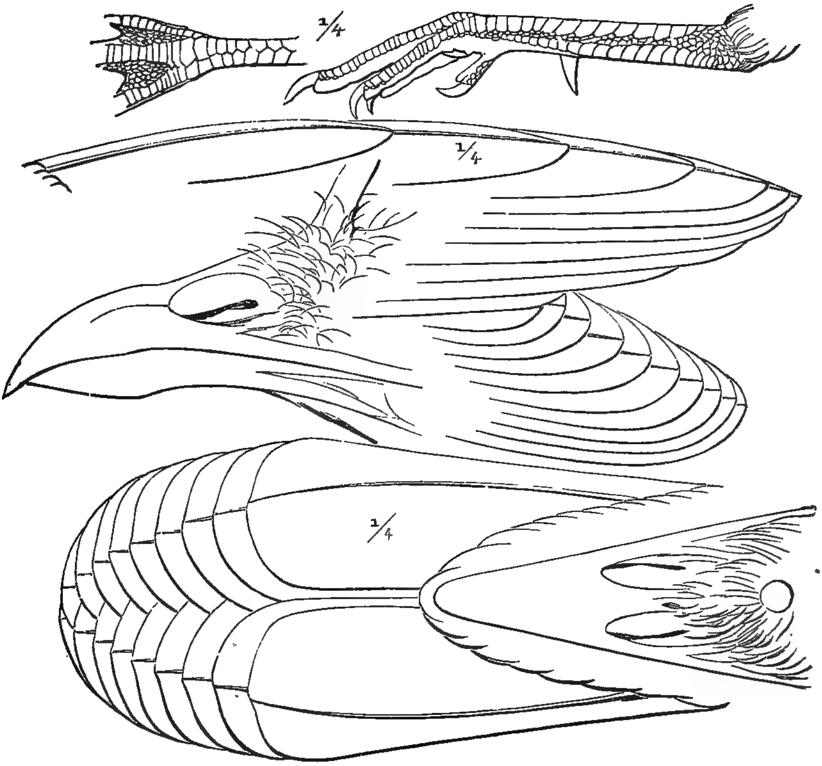
2. **Pediocætes** phasianellus.



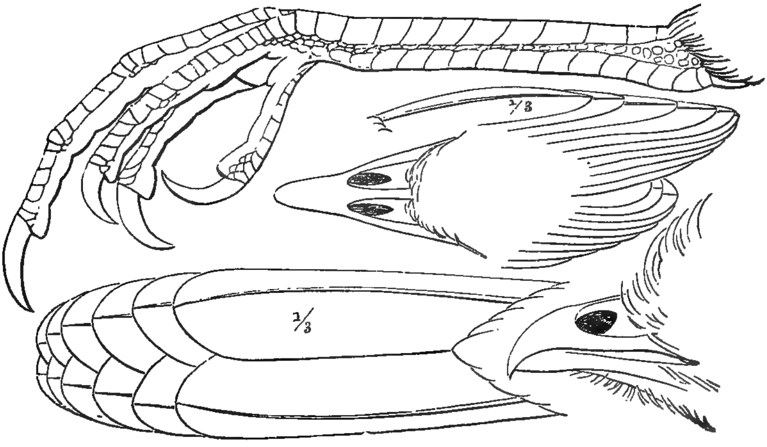
1. **Centrocercus** urophasianus.



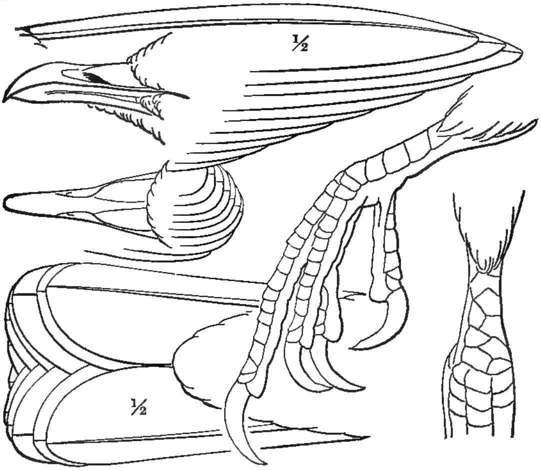
2. **Cathartes** aura. (See pl. lxiii., fig. 8.)



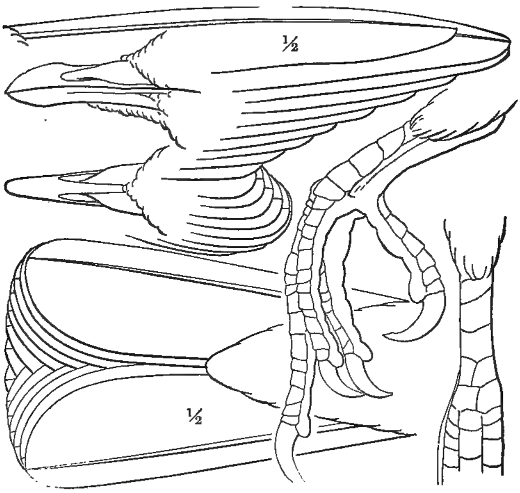
1. **Meleagris** gallopavo.



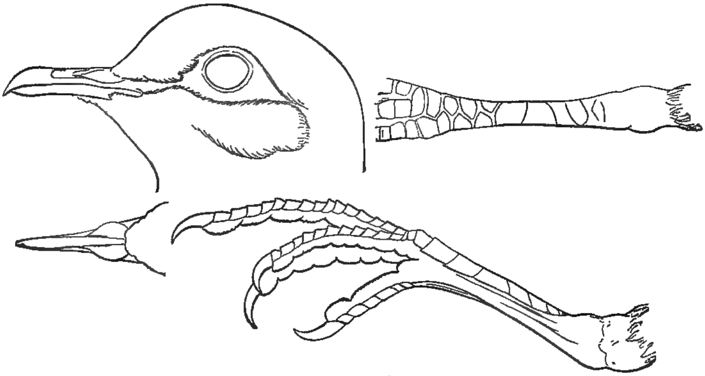
2. **Ortalis** maccalli.



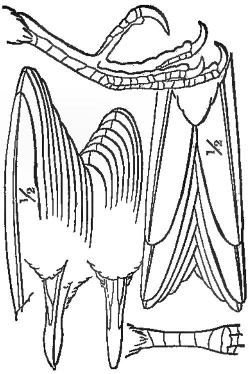
1. **Columba** fasciata.



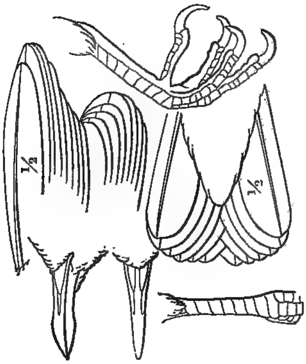
2. Columba ("**Patagiœnas**") leucocephala.



3. **Engyptila** albifrons.



5. **Scardafella** inca.



4. **Columbigallina** passerina.

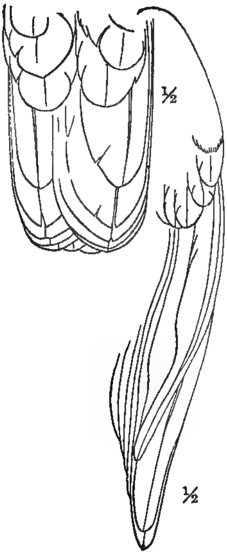
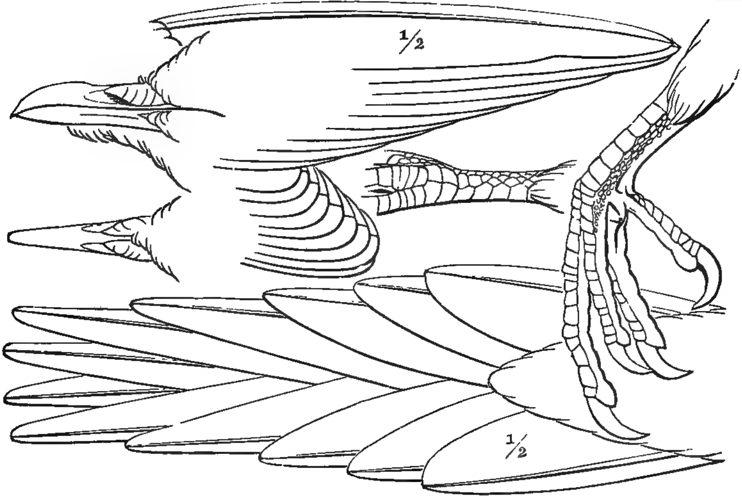
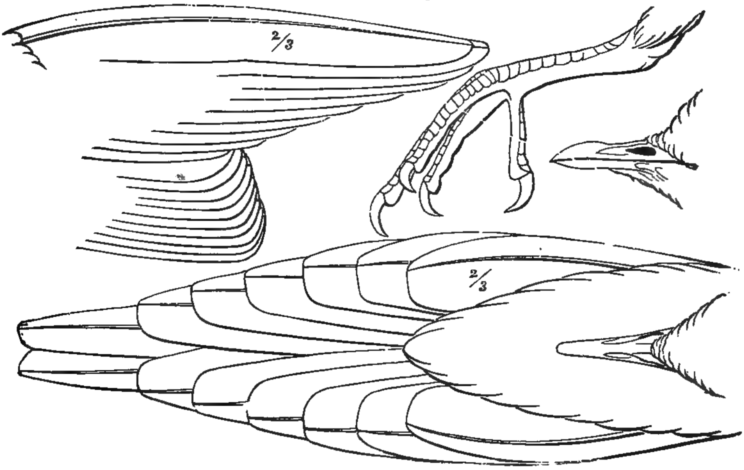


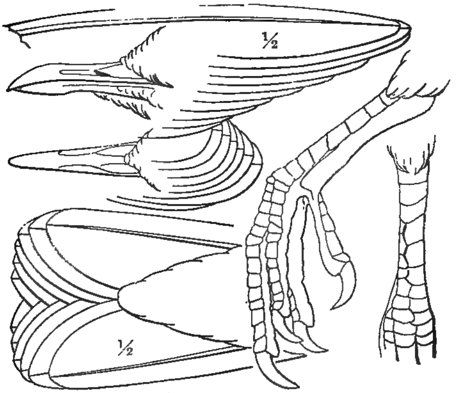
Plate LXIII.



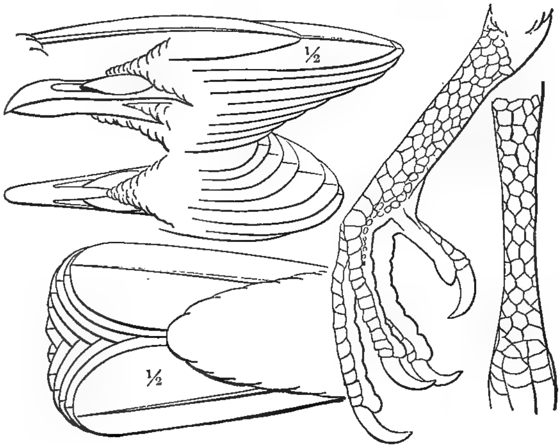
1. **Ectopistes** migratoria.



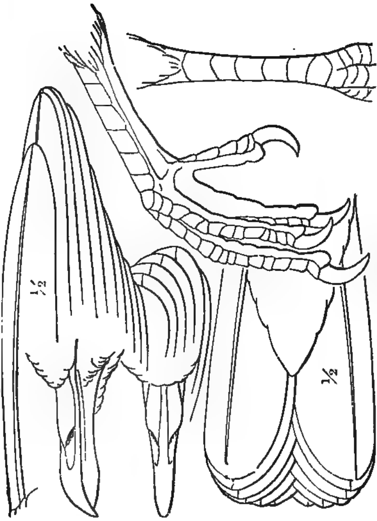
2. **Zenaidura** macroura.



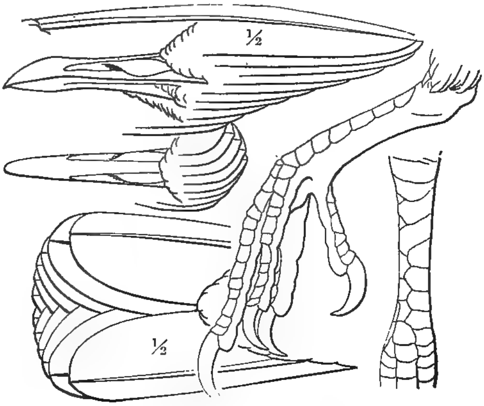
3. **Zenaida** amabilis.



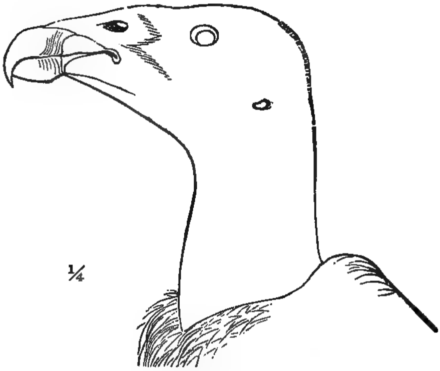
1. **Starnœnas** cyanocephala.



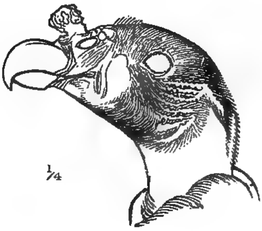
2. **Geotrygon** martinica.



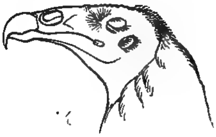
3. **Melopelia** leucoptera.



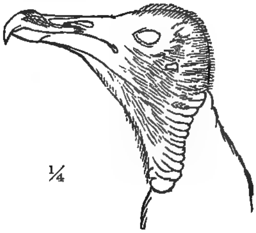
4. **Pseudogryphus** californianus.



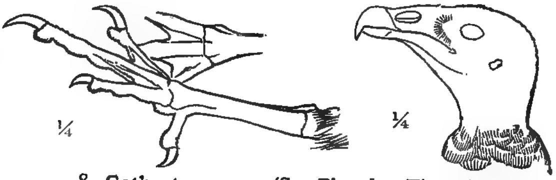
5. **Gypagus** papa.



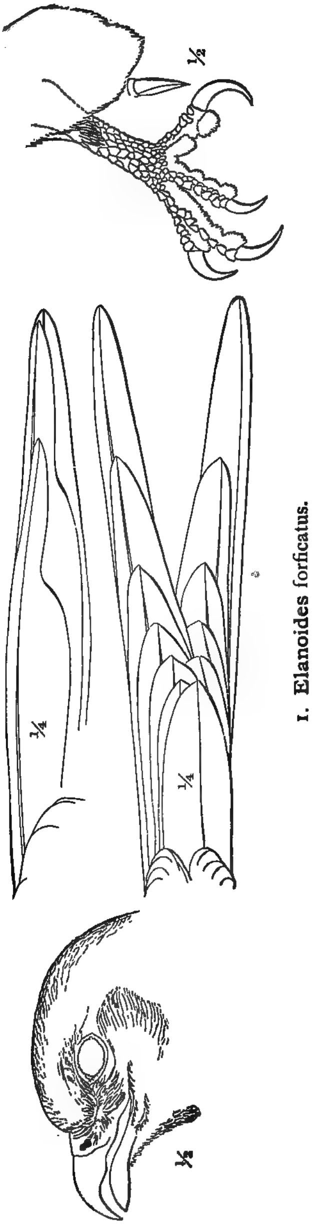
6. **Cathartes** burrovianus.



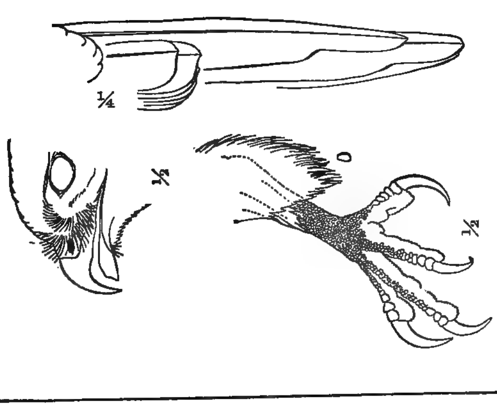
7. **Catharista** atrata.



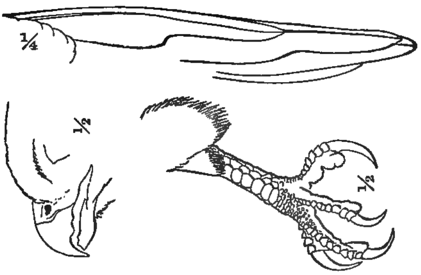
8 **Cathartes** aura. (See Plate lx., Fig. 2.)



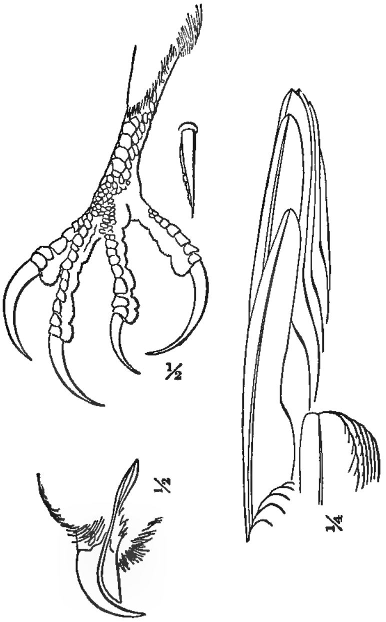
1. **Elanoides** forficatus.



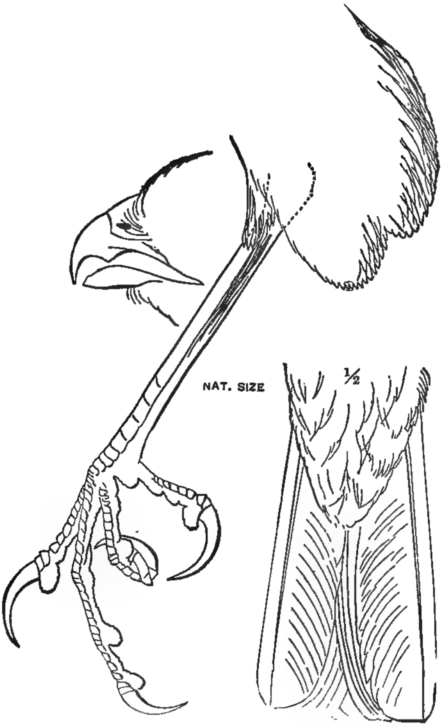
2. **Elanus** leucurus.



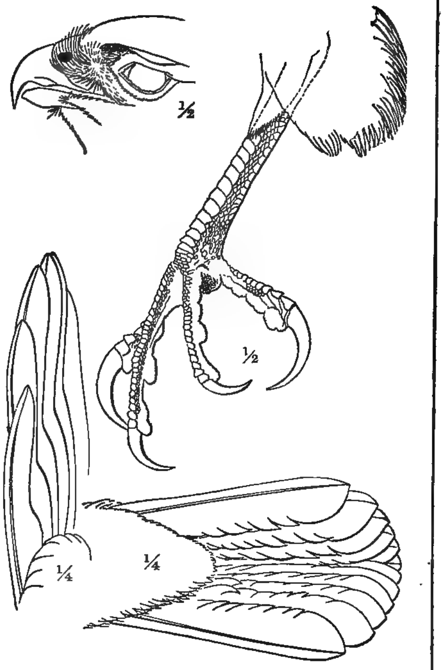
3. **Ictinia** mississippiensis.



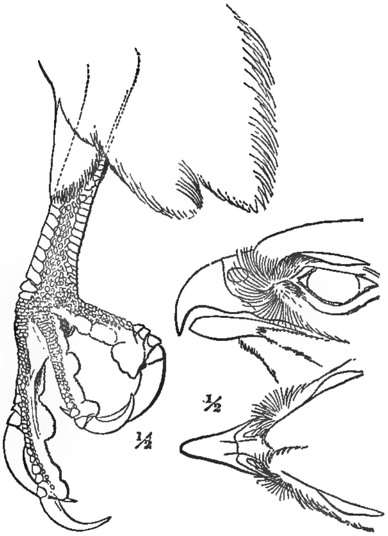
4. **Rostrhamus** sociabilis.



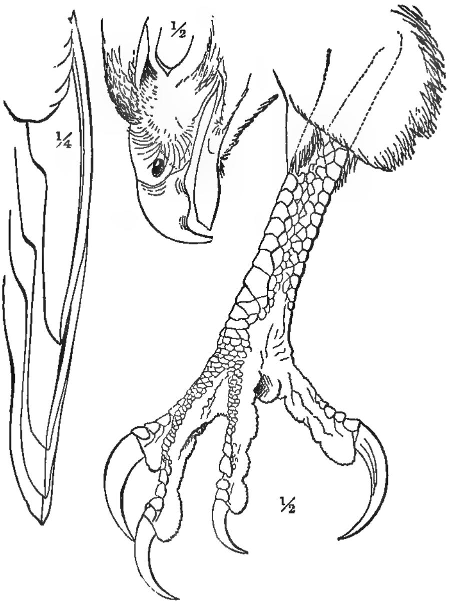
1. **Accipiter** fuscus, ♂.



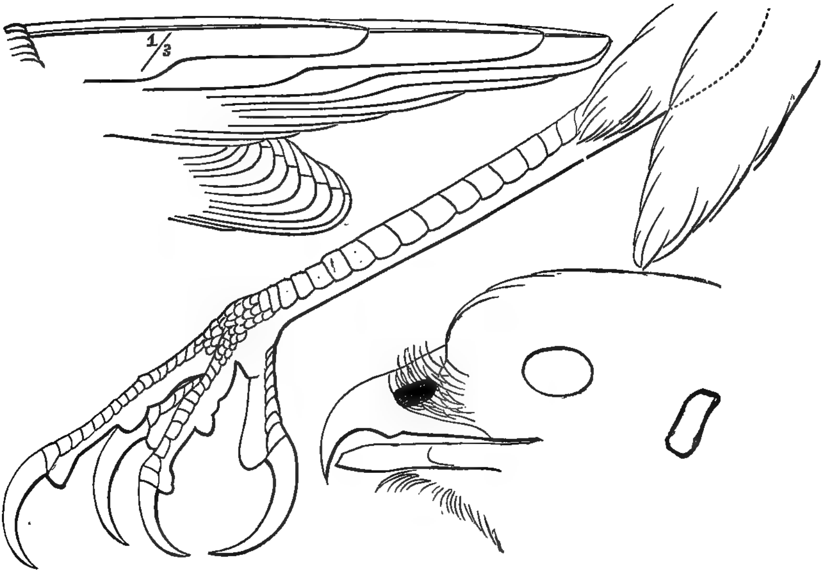
2. **Accipiter** cooperi, ♀.



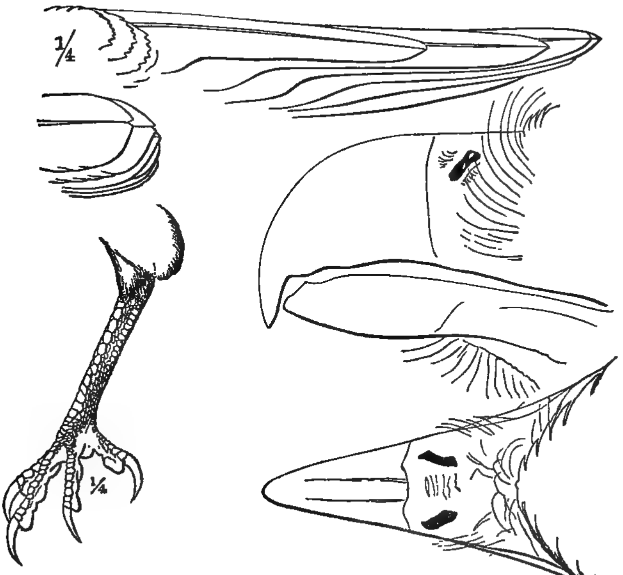
3. Accipiter (**Astur**) atricapillus.



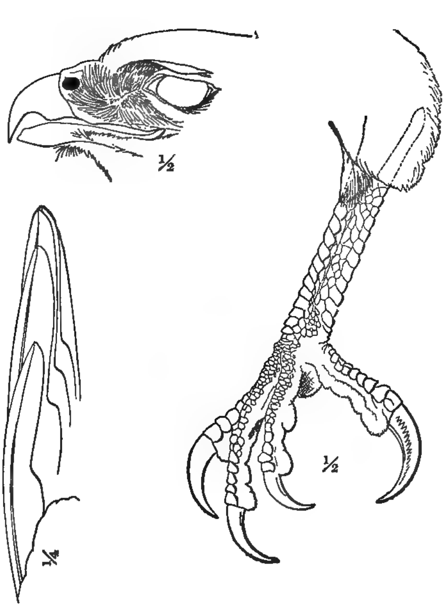
4. **Parabuteo** harrisi.



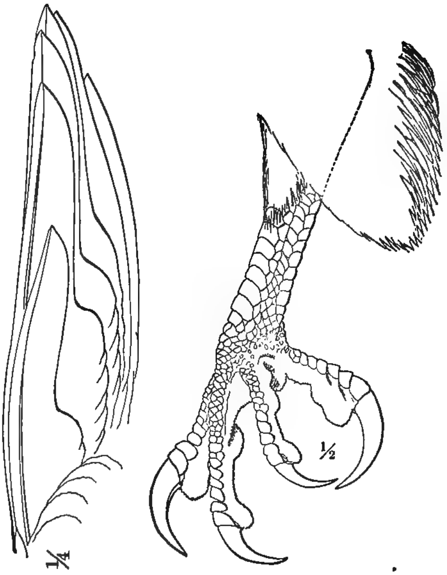
1. **Circus** hudsonius.



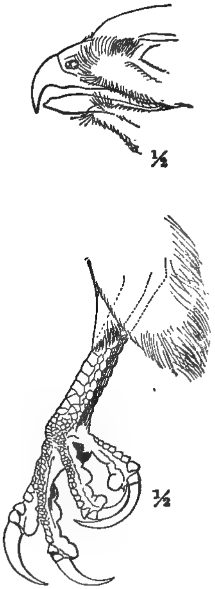
2. **Polyborus** cheriway.



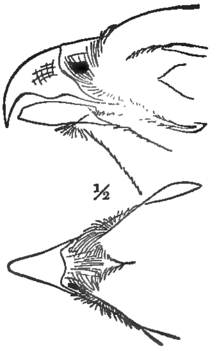
1. **Asturina** plagiata.



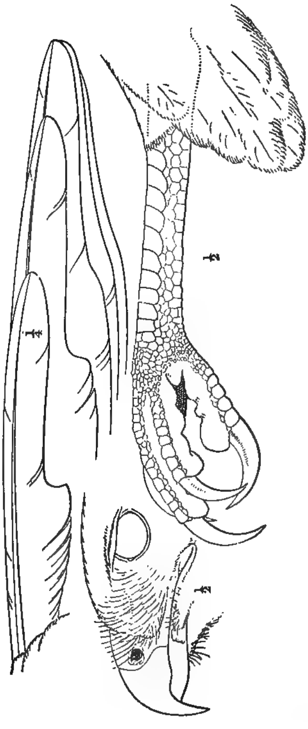
2. **Buteo** borealis.



3. Buteo (**Buteola**) fuliginosus.

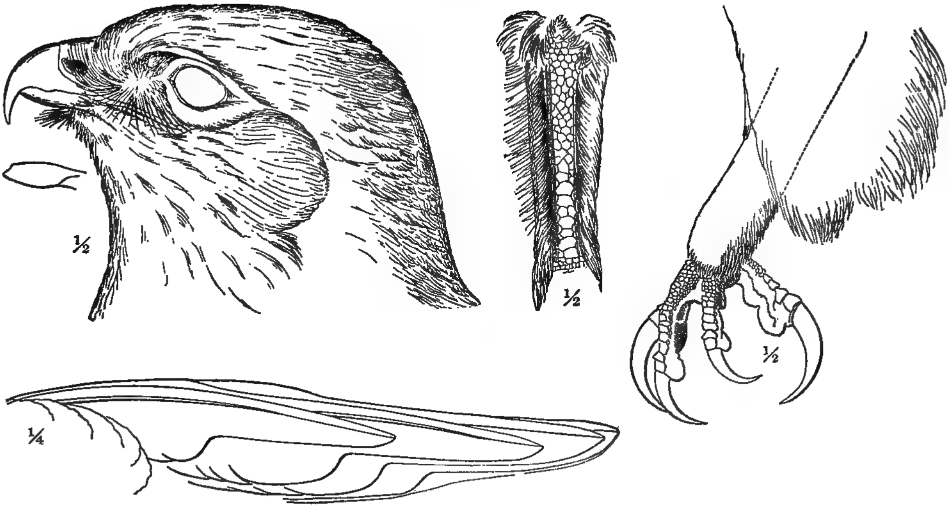


4. **Buteo** borealis.

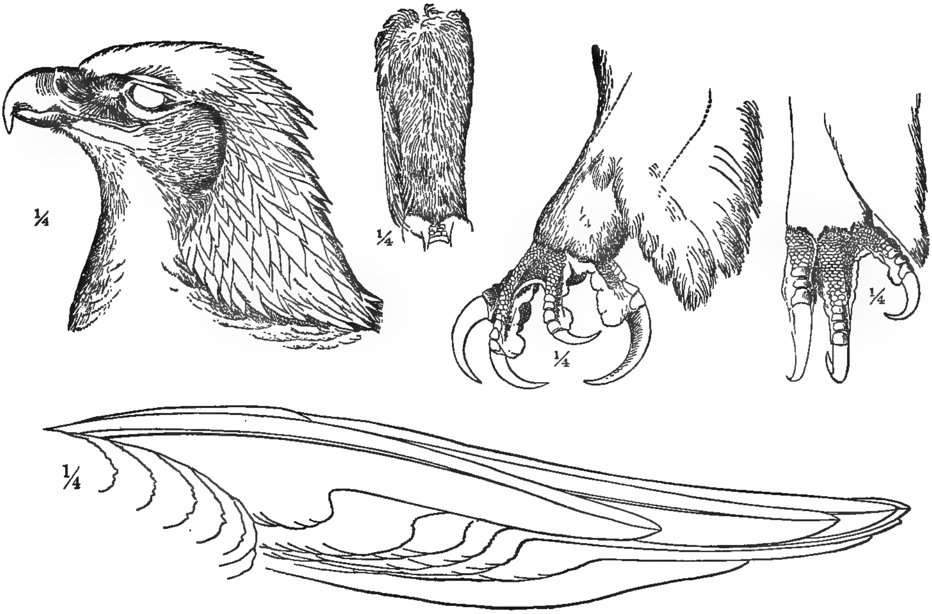


5. Buteo (**Tachytriorchis**) albicaudatus.

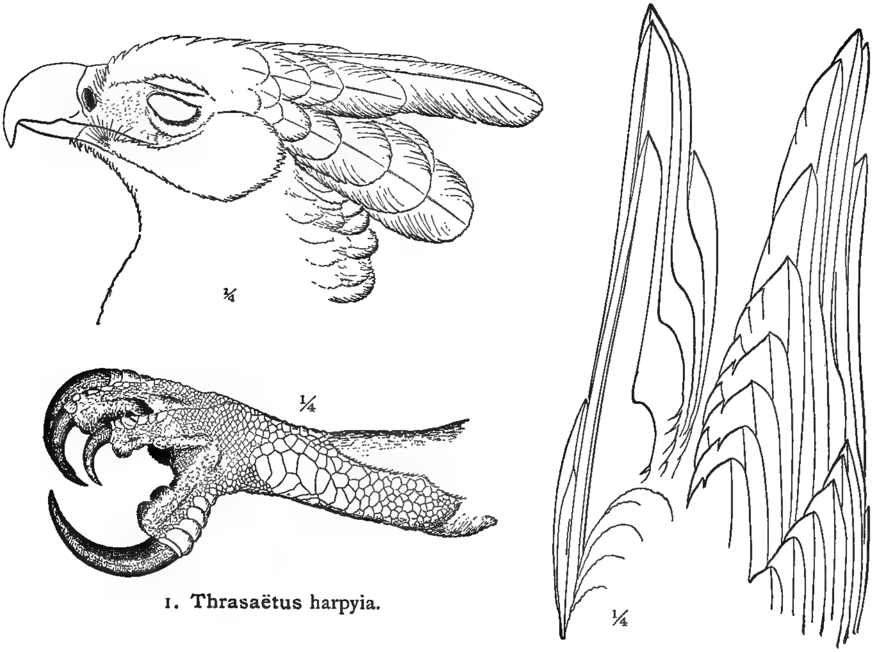
Plate LXIX.



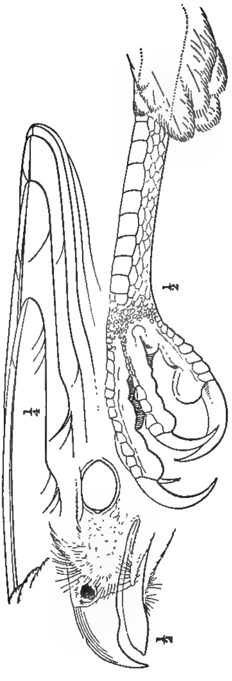
1. **Archibuteo** sanctijohannis.



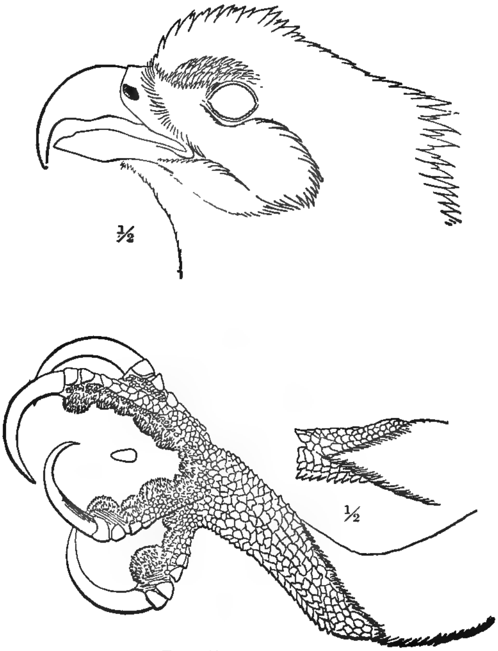
2. **Aquila** chrysaetos.



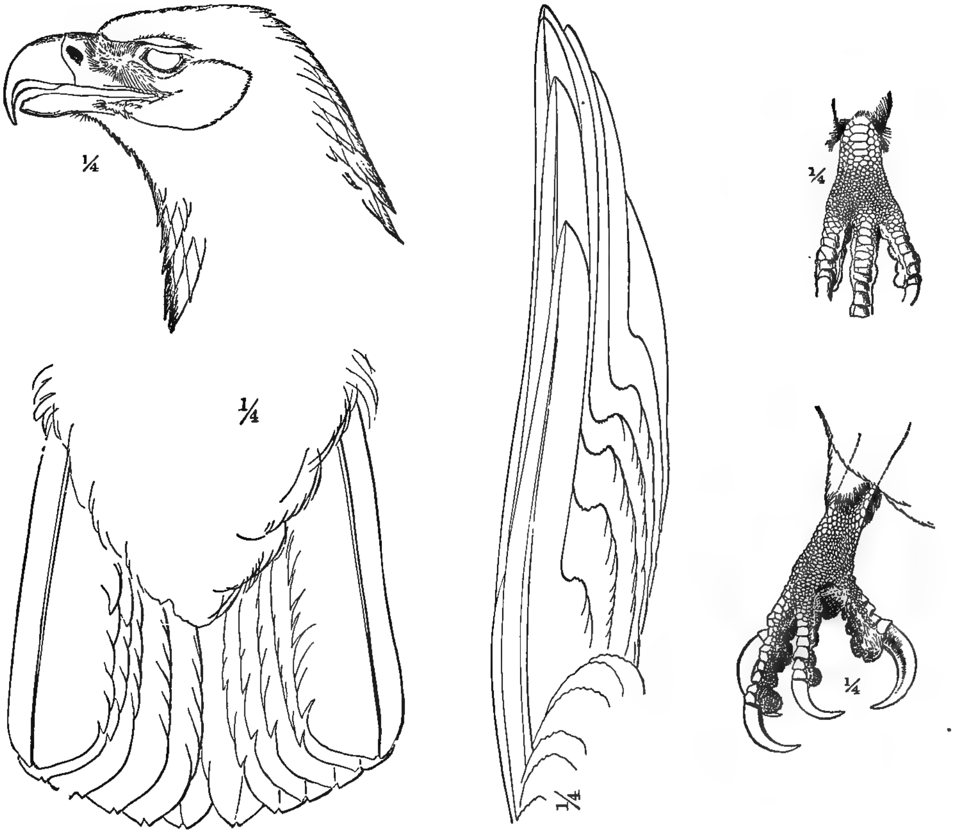
1. Thrasaëtus harpyia.



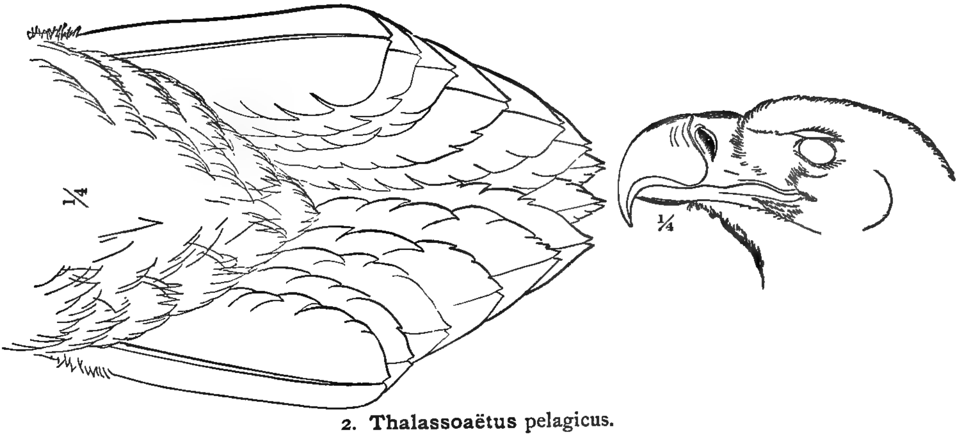
2. **Urubitinga** anthracina.



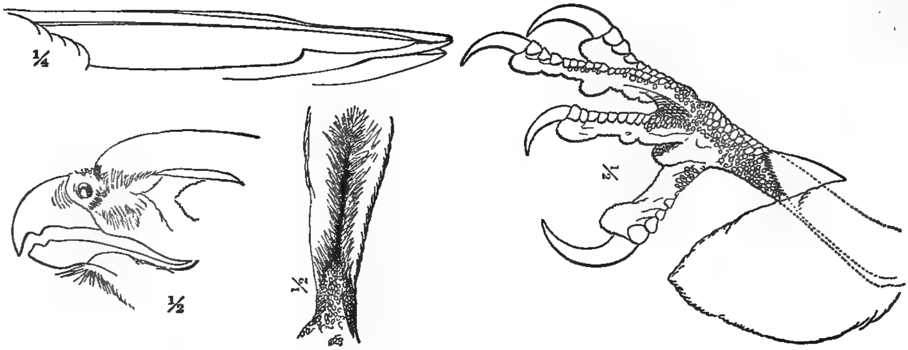
3. **Pandion** carolinensis.



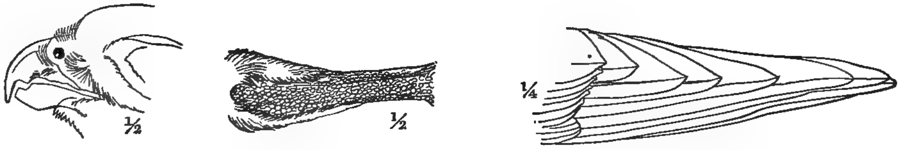
1. **Haliæëtus** leucocephalus.



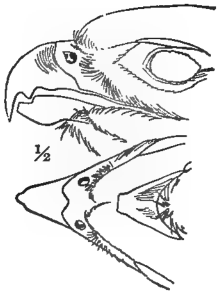
2. **Thalassoaëtus** pelagicus.



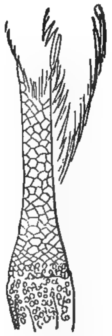
1. Falco (**Hierofalco**) gyrfalco.



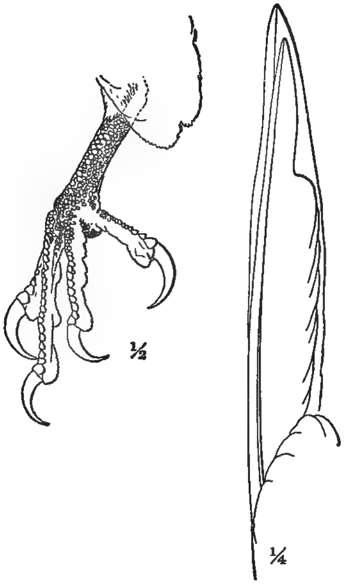
2. Falco (**Gennaia**) mexicanus.



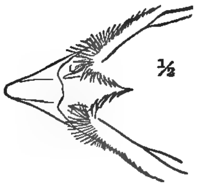
3. Falco (**Rhynchodon**) anatum.



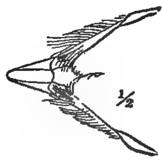
4. Falco (**Neofalco**) albigularis.



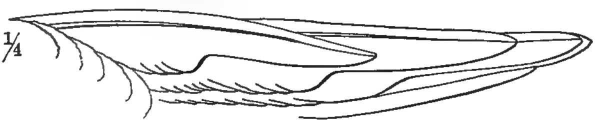
5. Falco (**Neofalco**) deiroleucus.



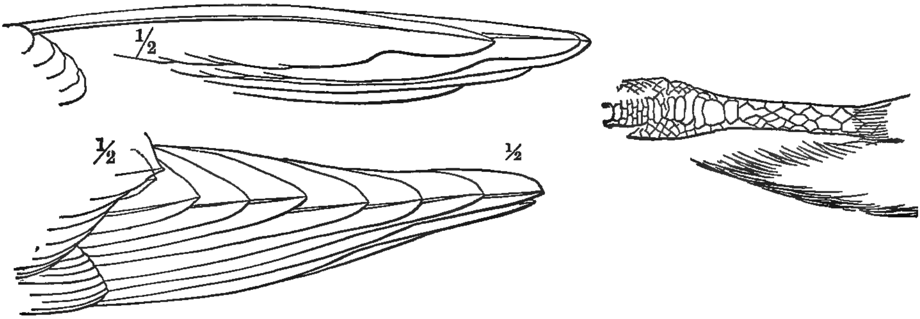
6. **Archibuteo** ferrugineus.



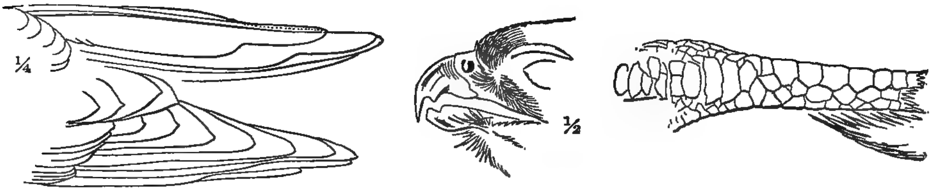
7. **Archibuteo** sancti-johannis.



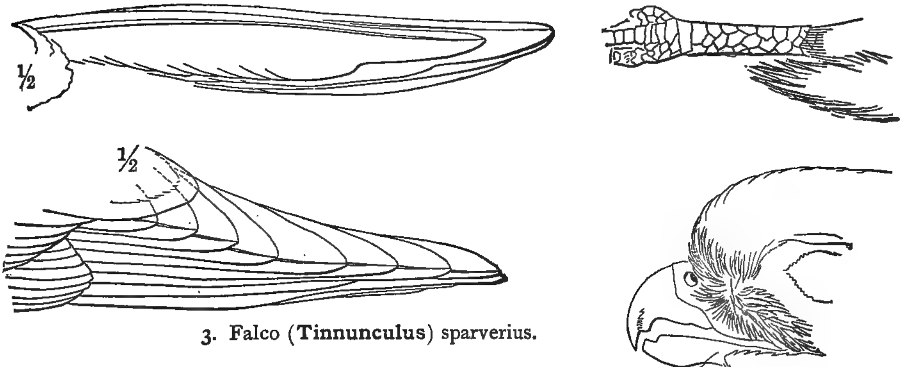
8. **Buteo** swainsoni.



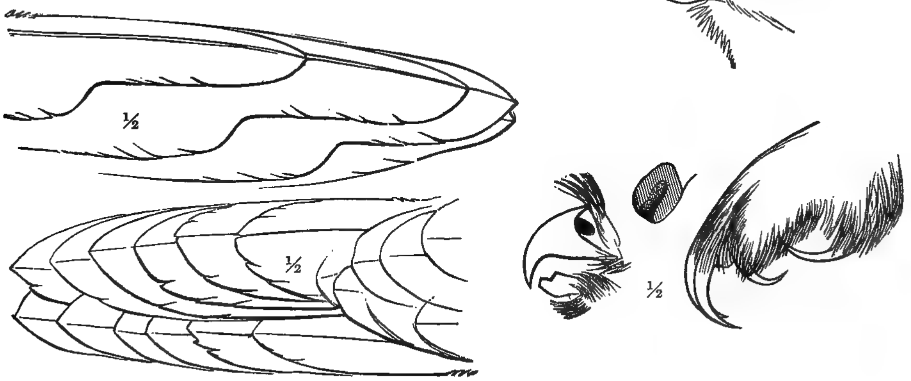
1. Falco (**Æsalon**) richardsonii.



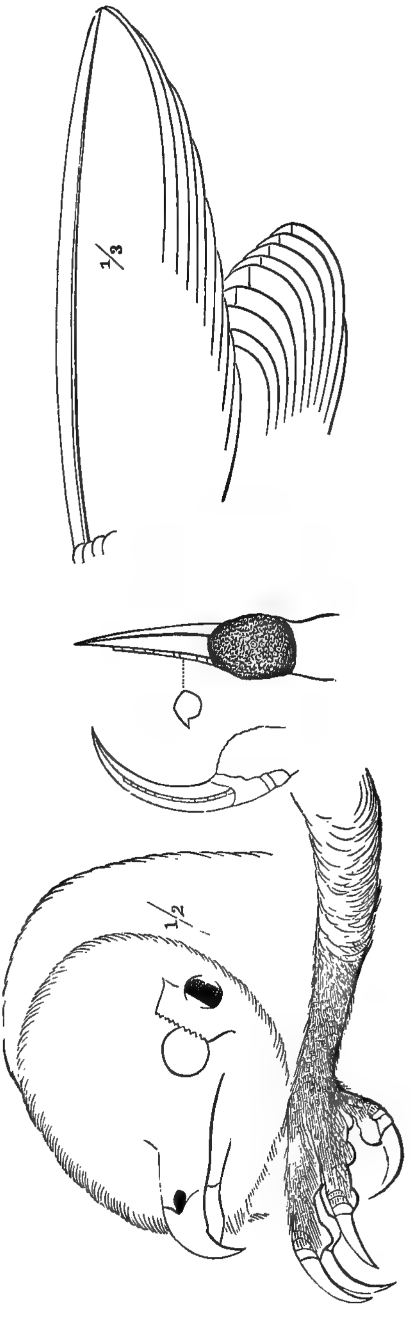
2. Falco (**Rhynchofalco**) fusco-cærulescens



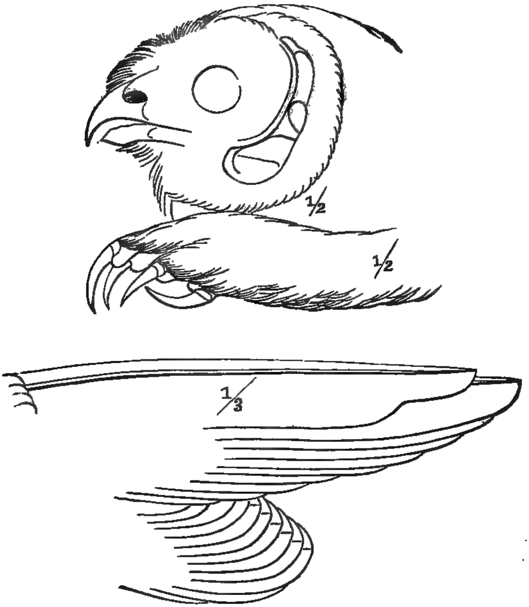
3. Falco (**Tinnunculus**) sparverius.



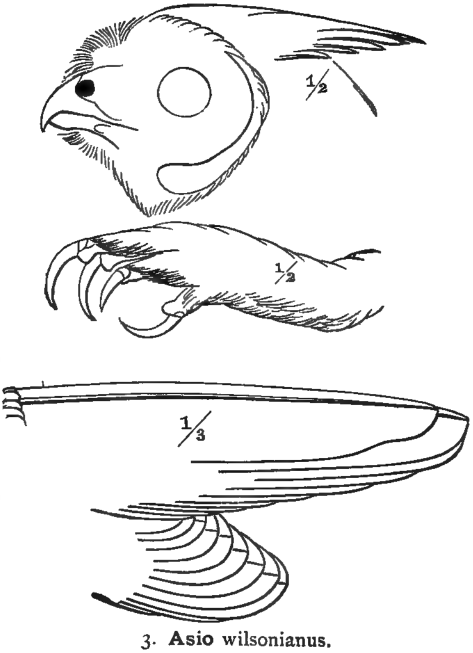
4. **Surnia** caparoch.



1. **Strix pratincola.**

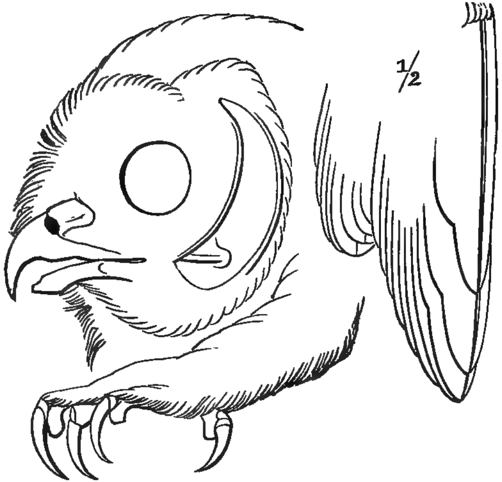


2. Asio (**Brachyotus**) accipitrinus.

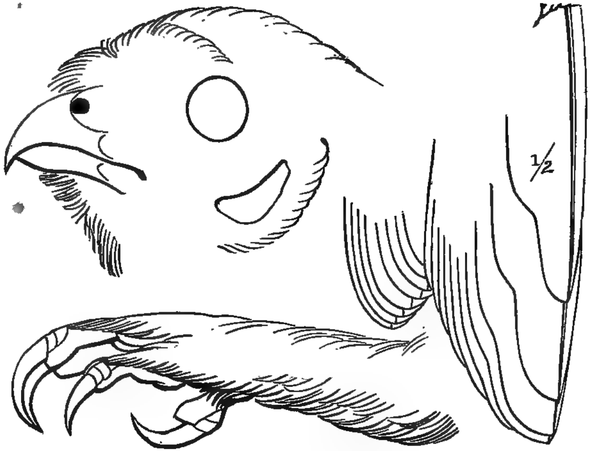


3. **Asio** wilsonianus.

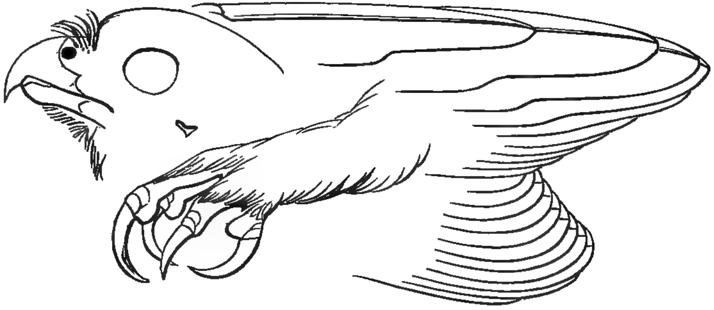
Plate LXXV.



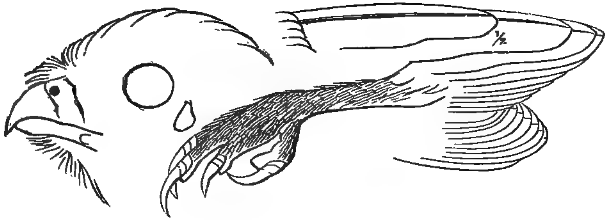
1. **Nyctala** acadica.



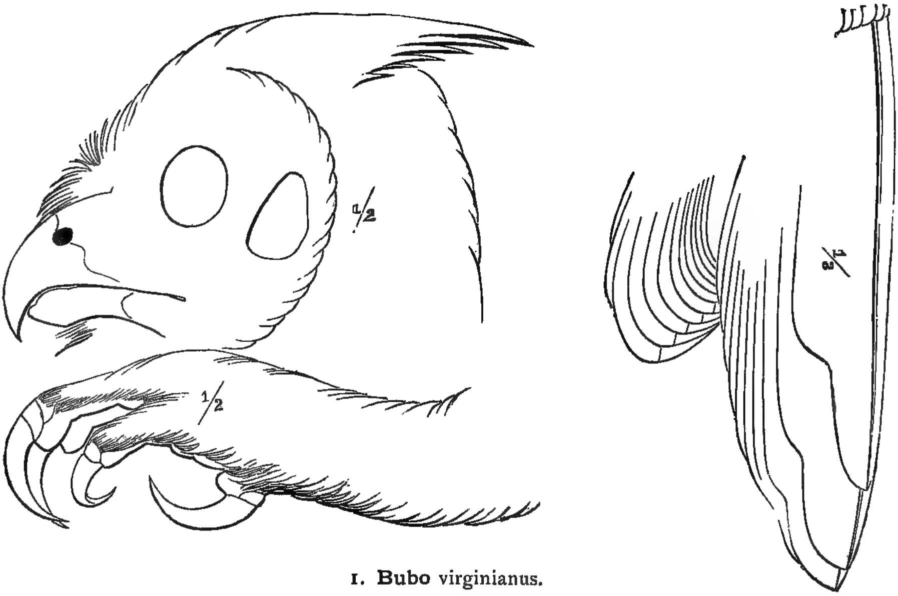
2. **Megascops** asio.



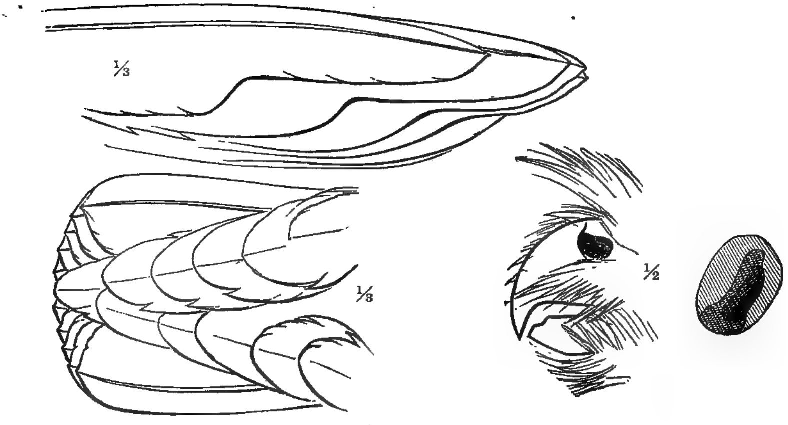
3. **Glaucidium** gnoma.



4. **Micrathene** whitneyi.

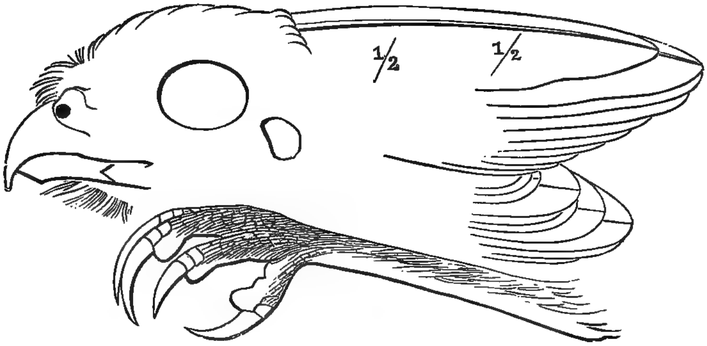


1. **Bubo** virginianus.

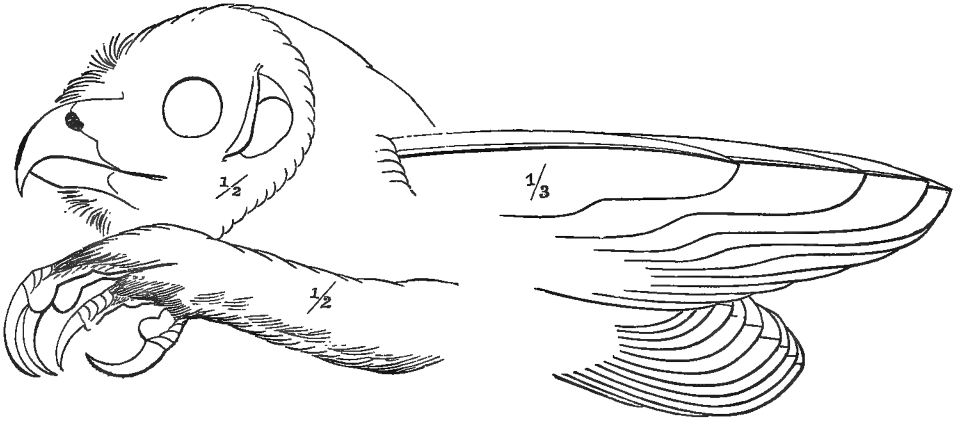


2. **Nyctea** nyctea.

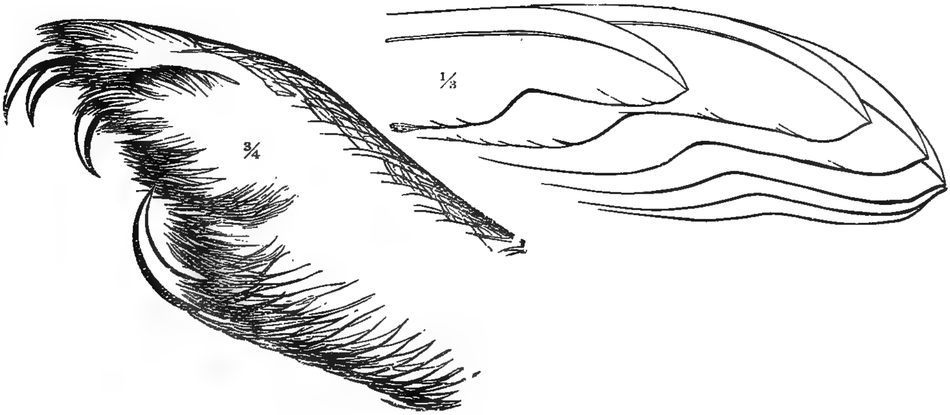
Plate LXXVII.



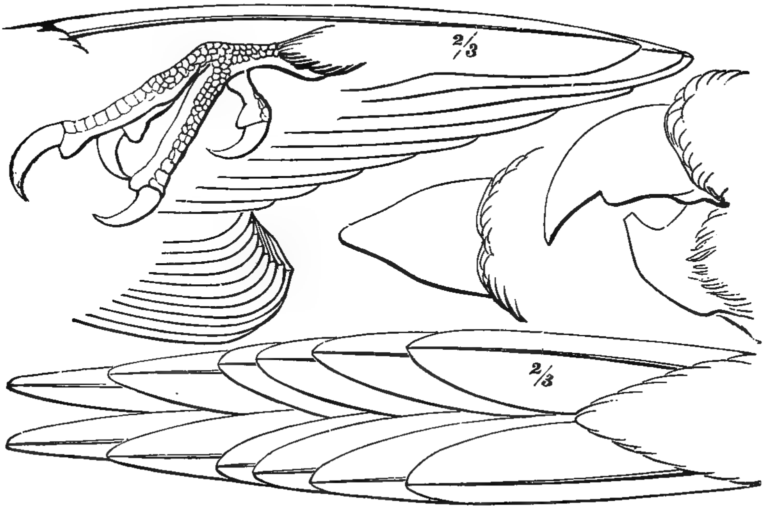
1. **Speotyto** hypogæa.



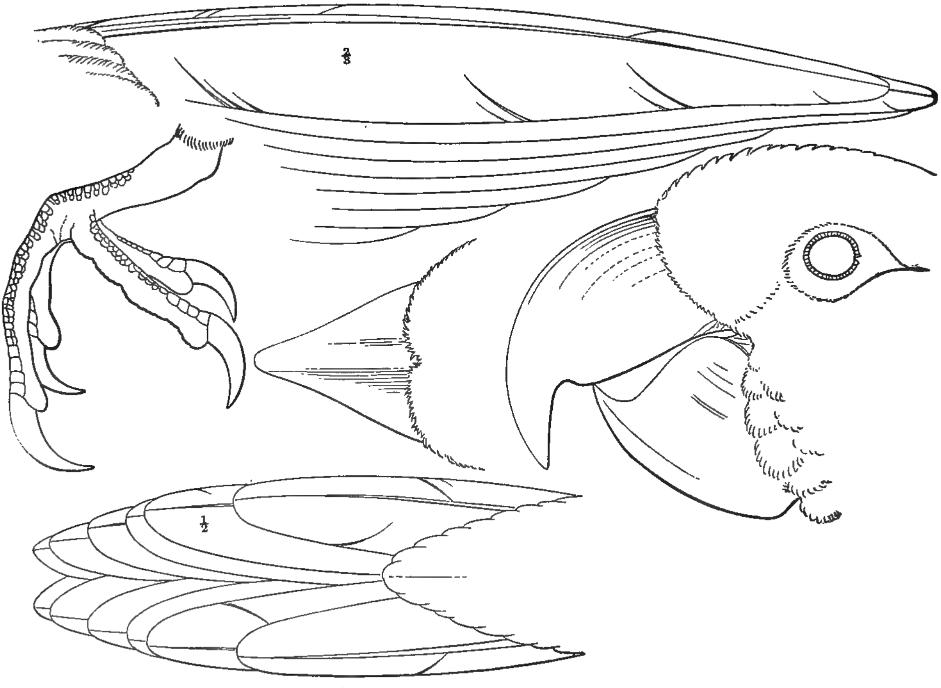
2. **Syrnium** nebulosum.



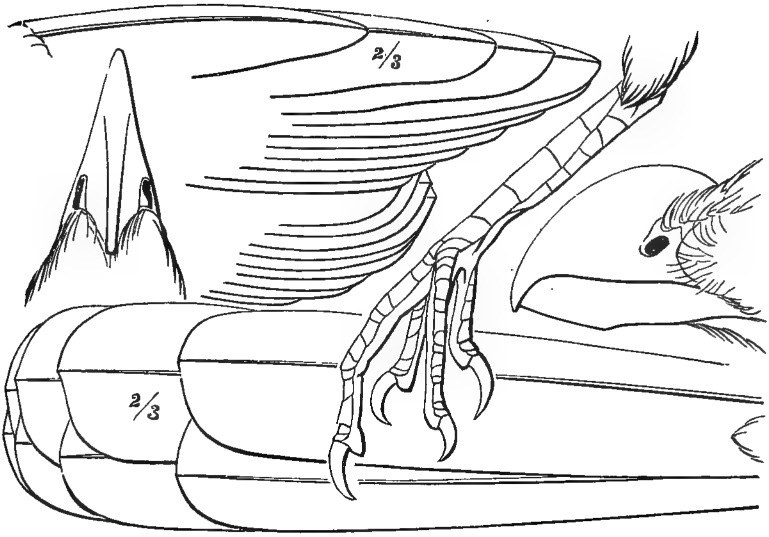
3. **Scotiaptex** cinereum.



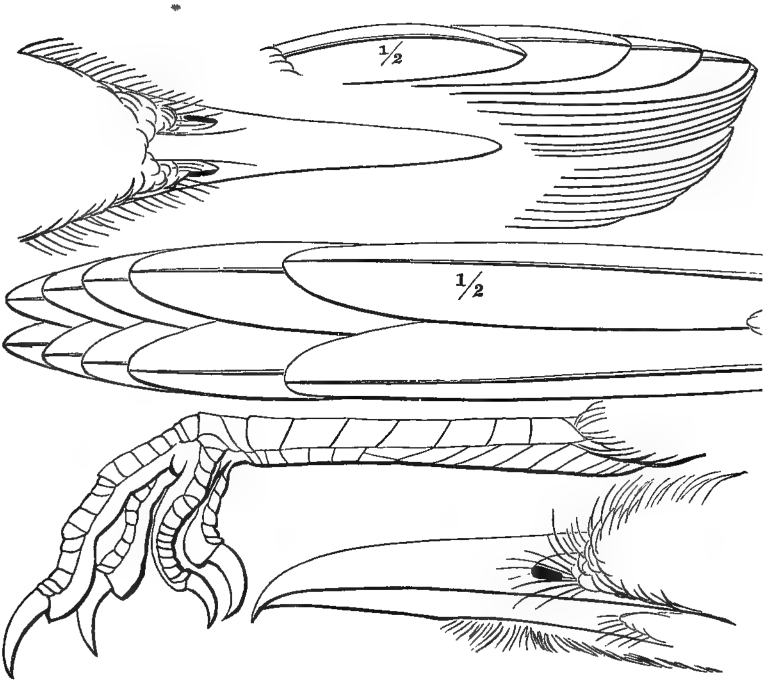
1. **Conurus** carolinensis.



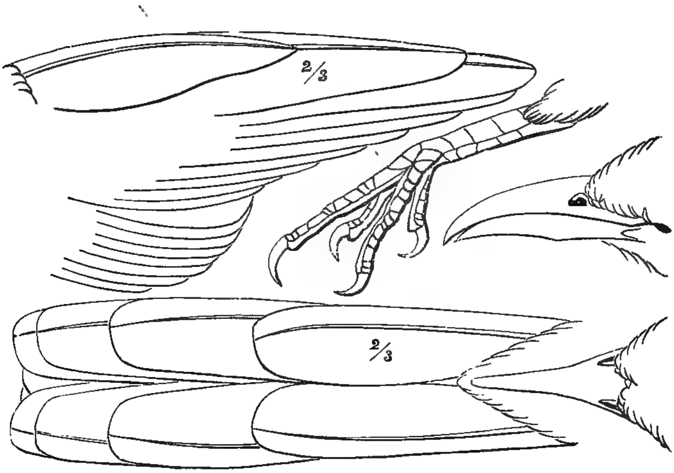
2 **Rhynchopsitta** pachyrhyncha.



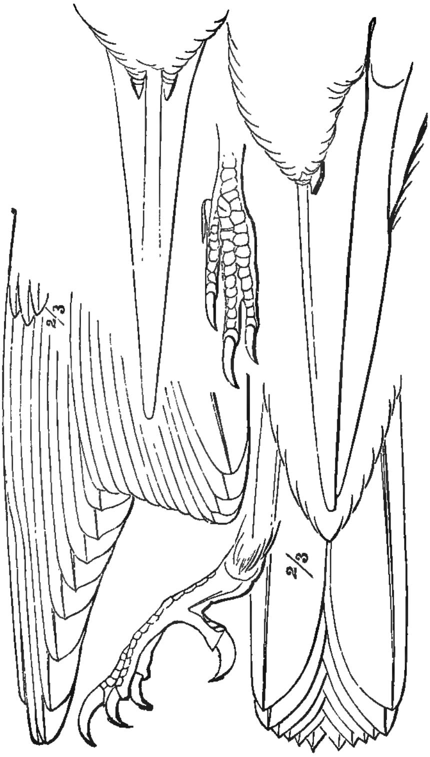
1. **Crotophaga** ani.



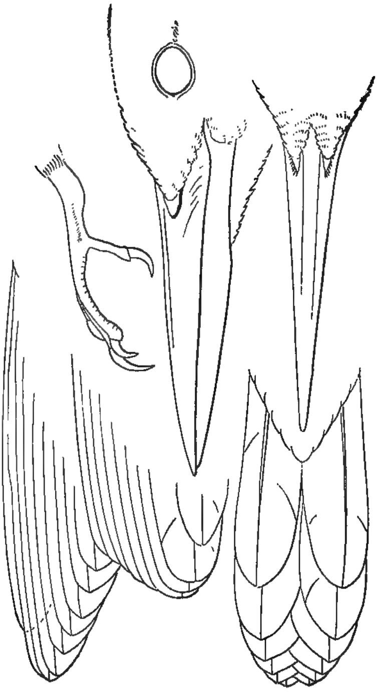
2. **Geococcyx** californianus.



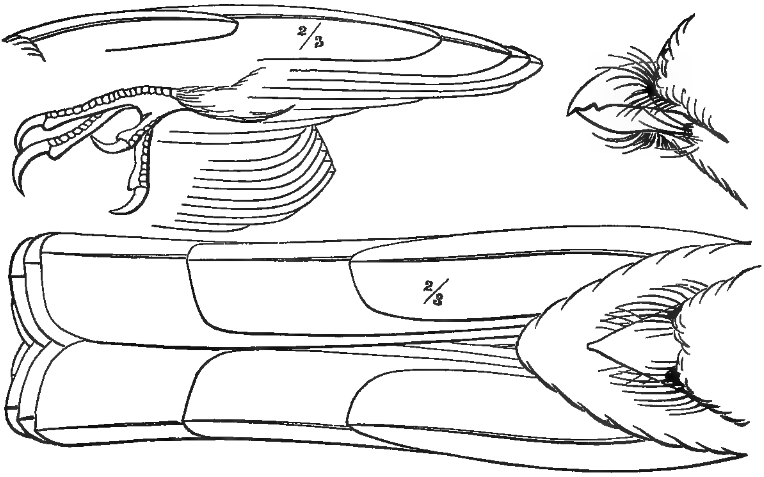
1. **Coccyzus** americanus.



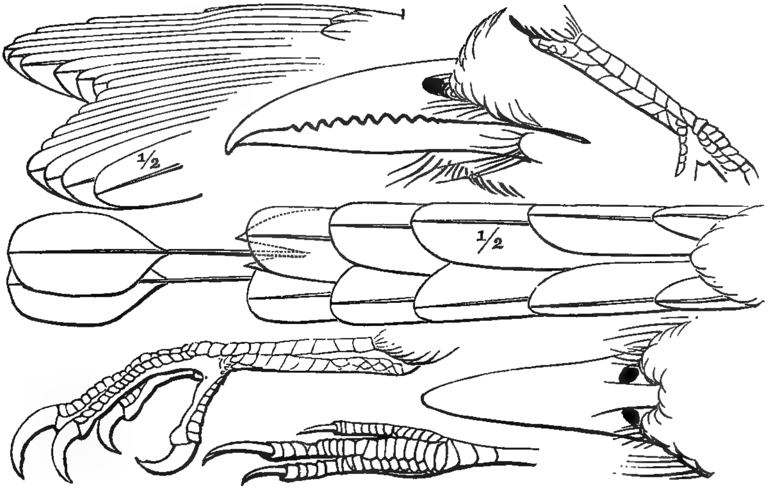
2. Ceryle (**Streptoceryle**) alcyon.



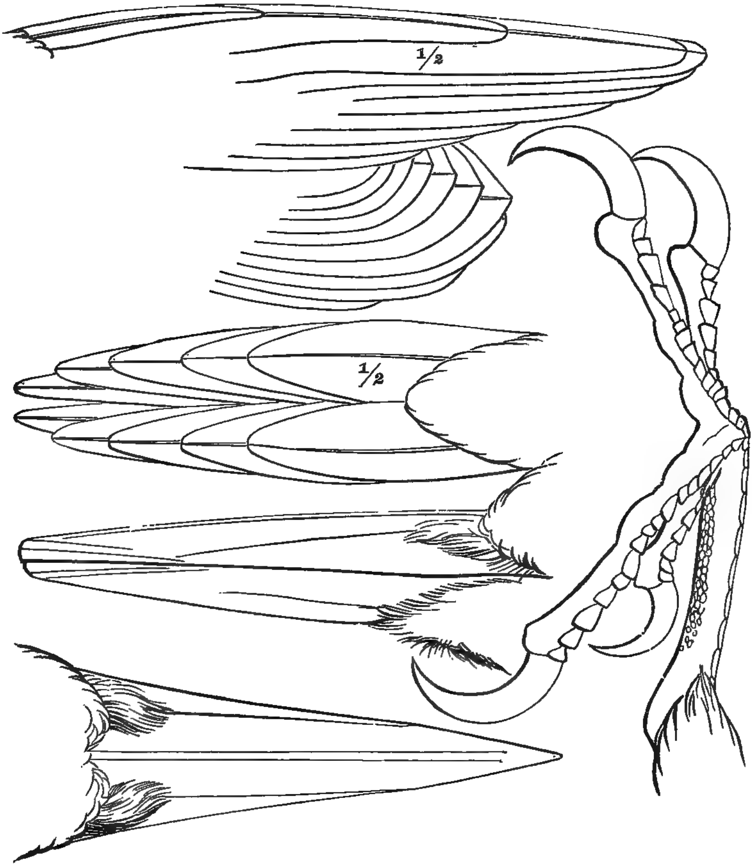
3. Ceryle (**Chloroceryle**) cabanisi.



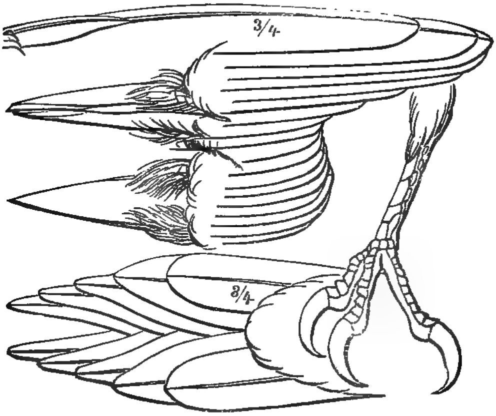
1. **Trogon** ambiguus.



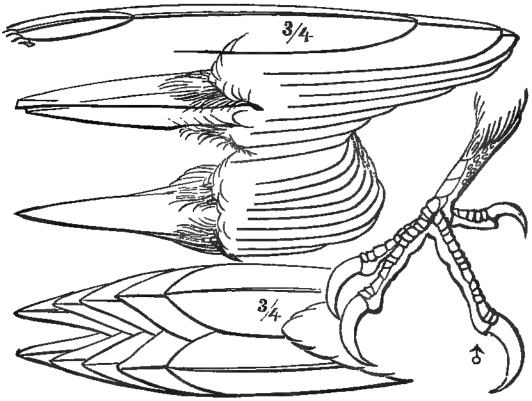
2. **Momotus** cæruleiceps.



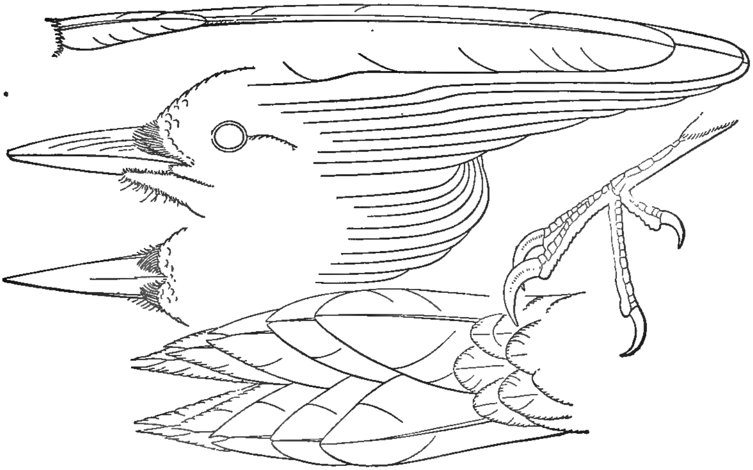
1. **Campephilus** principalis.



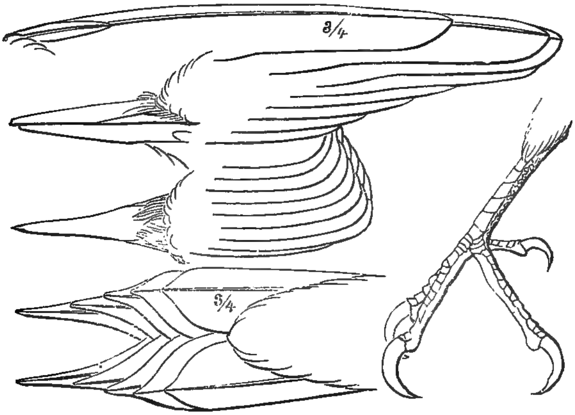
2. **Picoides** arcticus.



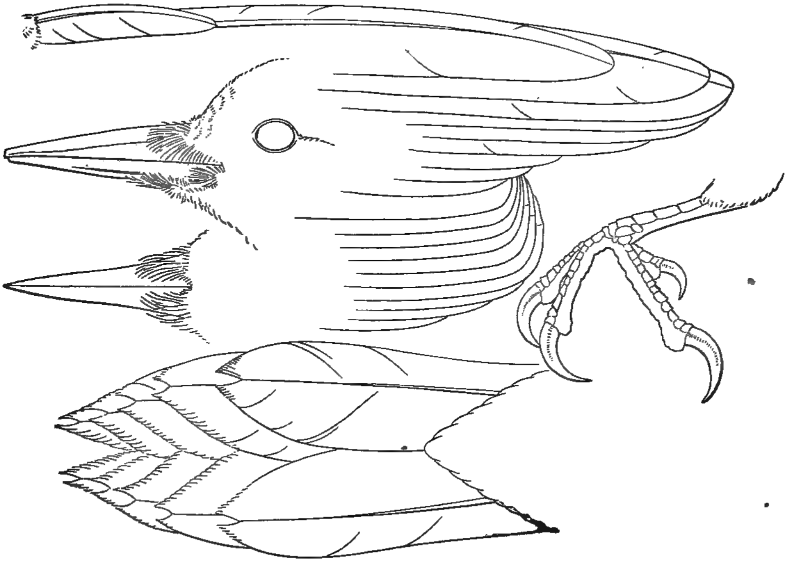
1. **Dryobates** villosus.



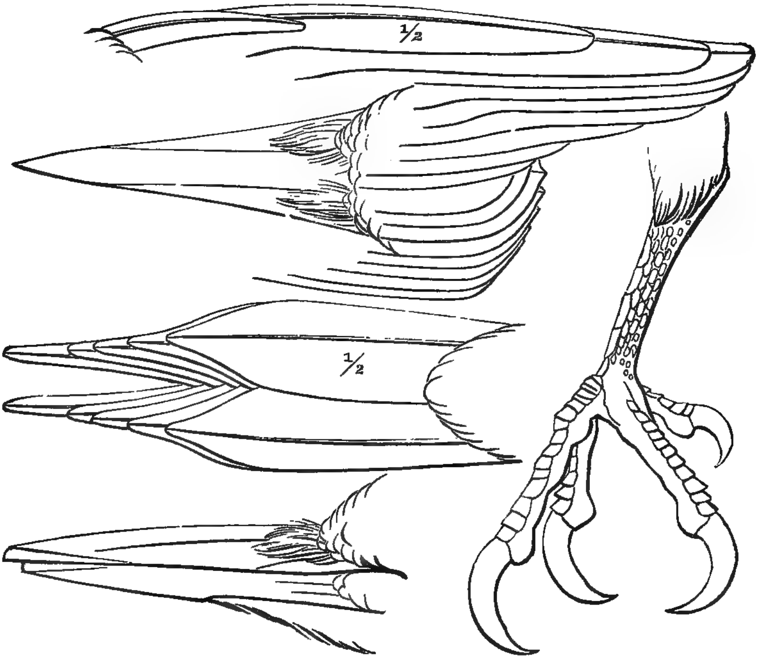
2. Dryobates (“ **Phrenopicus**”) borealis.



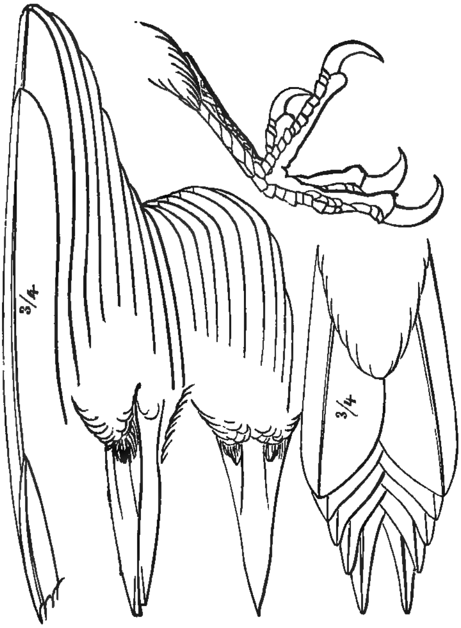
3. **Sphyropicus** varius.



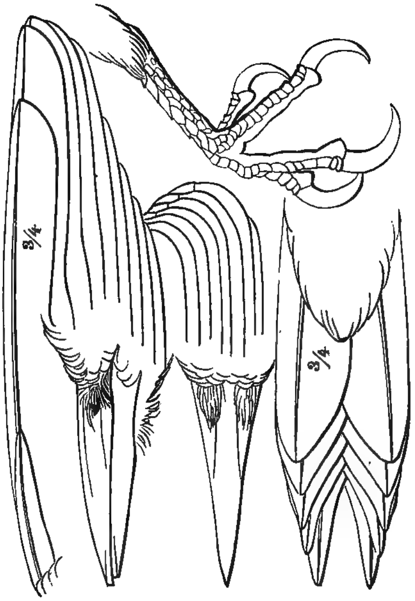
1. **Xenopicus** albolarvatus.



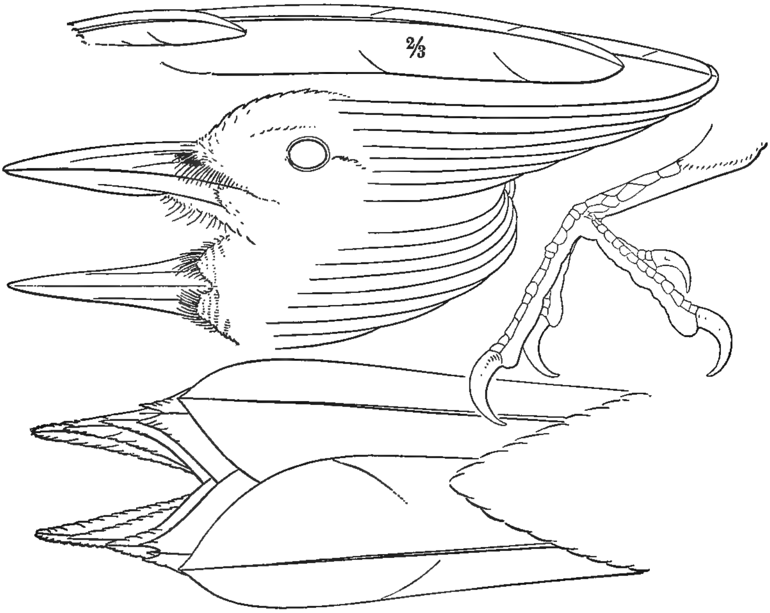
2. **Ceophlœus** pileatus.



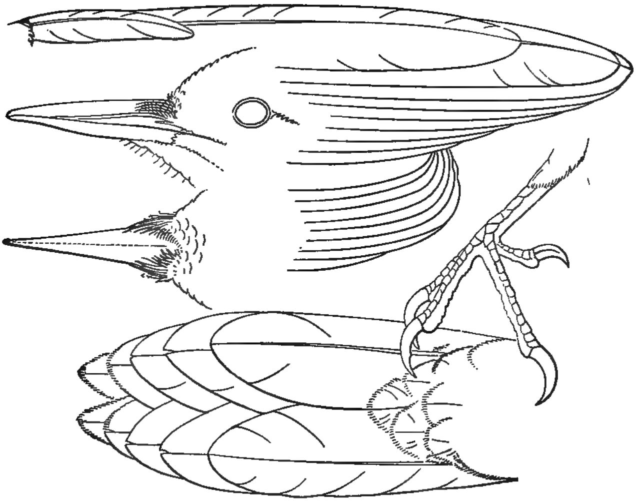
1. **Melanerpes** erythrocephalus.



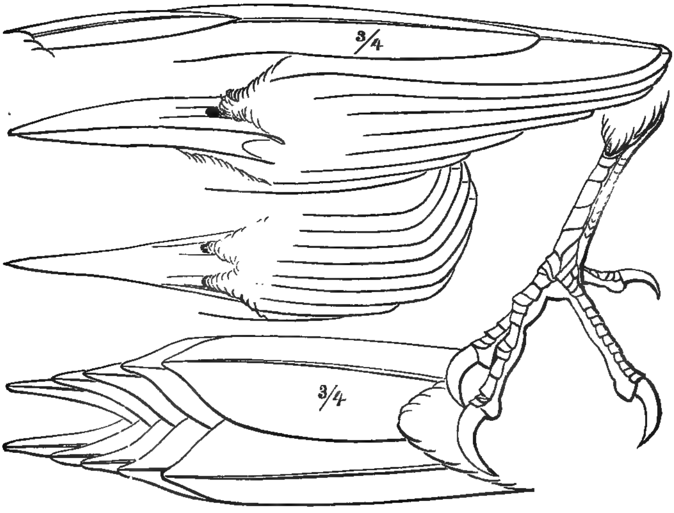
2. Melanerpes (**Centurus**) carolinus.



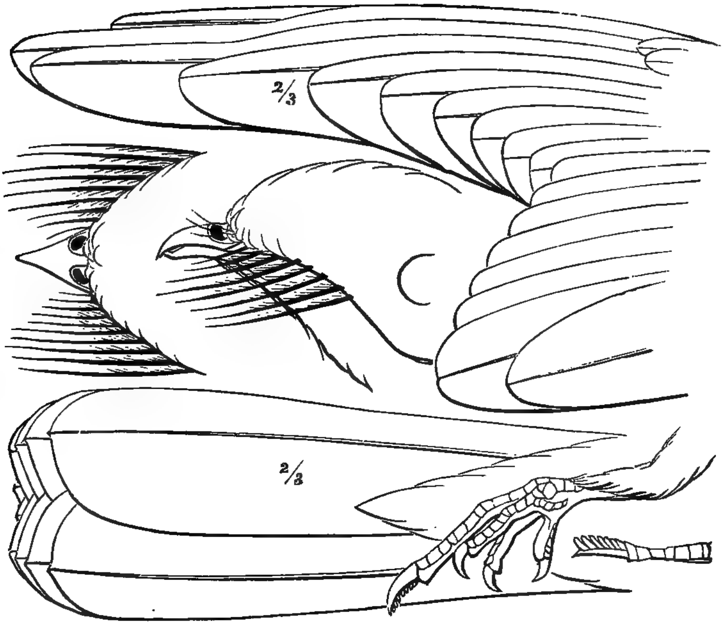
3. Melanerpes (**Asyndesmus**) torquatus.



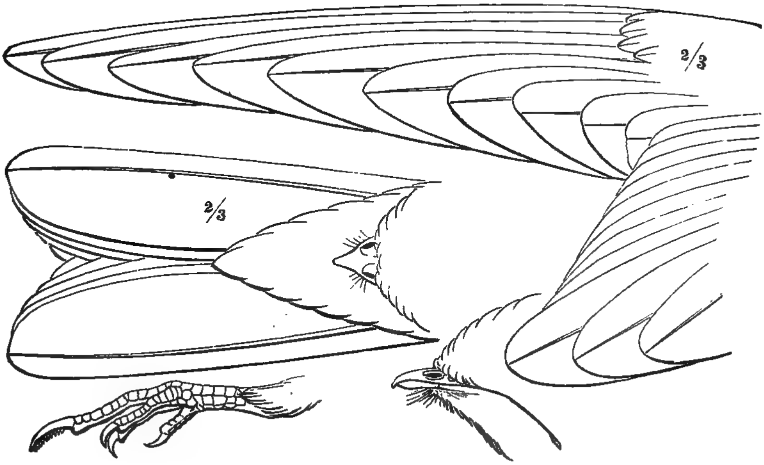
1. Dryobates ("**Dyctiopicus**") scalaris.



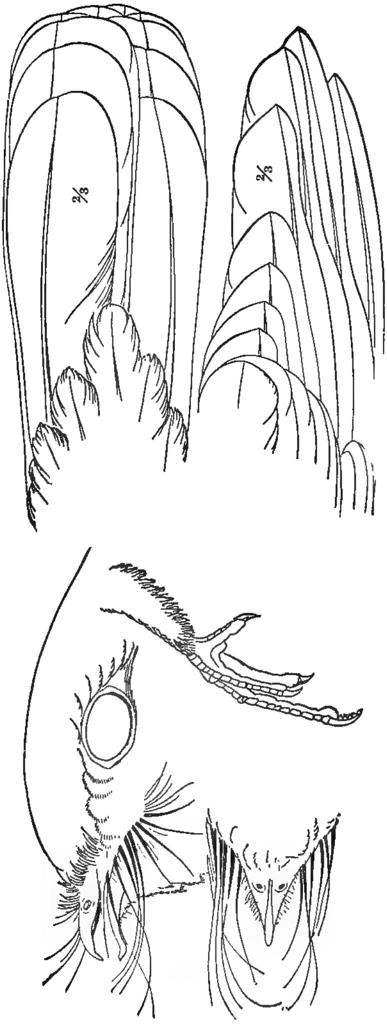
2. **Colaptes** auratus.



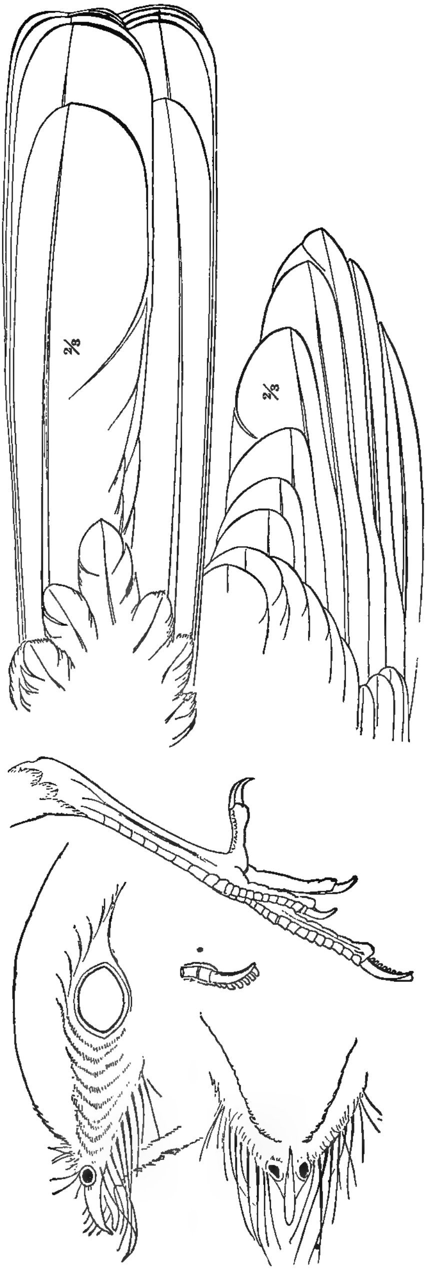
1. **Antrostomus** carolinensis.



2. **Chordeiles** virginianus.

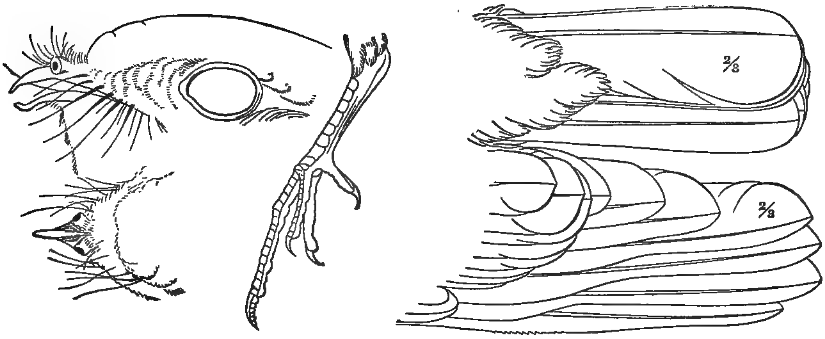


1. Antrostomus vociferus.

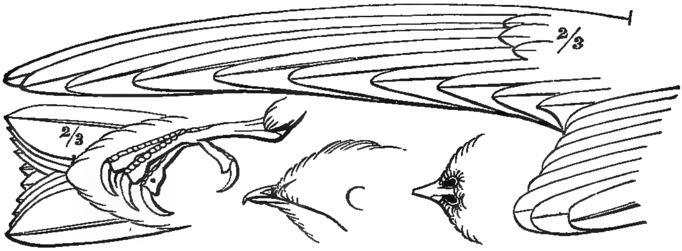


2. Nyctidromus albicollis.

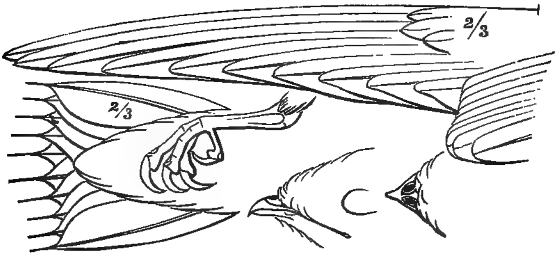
Plate LXXXIX.



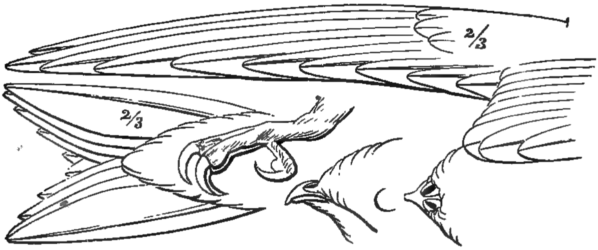
1. **Phalænoptilus** nuttalli.



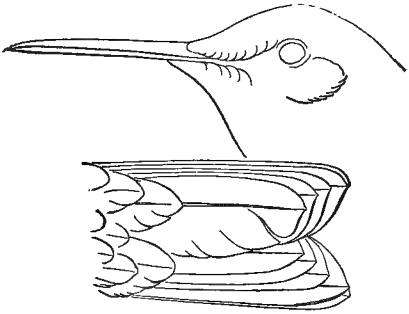
2. **Cypseloides** niger.



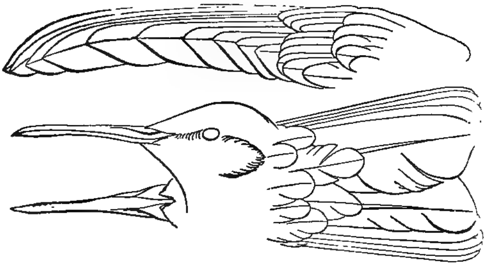
3. **Chætura** pelagica.



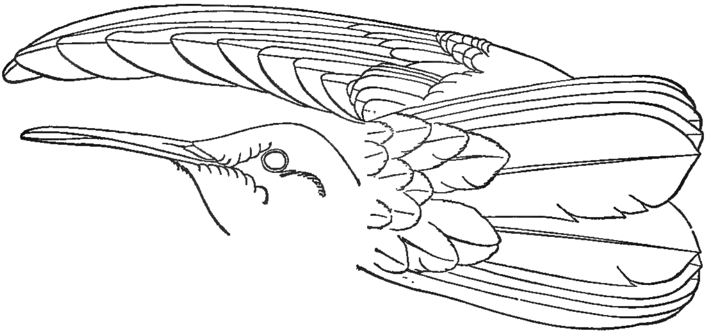
4. **Micropus** melanoleucus.



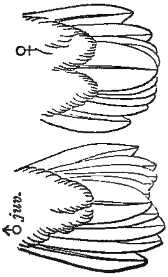
1. **Eugenes** fulgens.



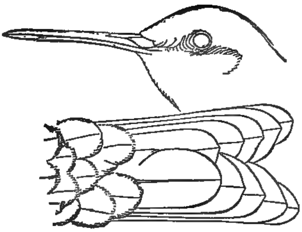
2. **Amazilia** pristina, ♂.



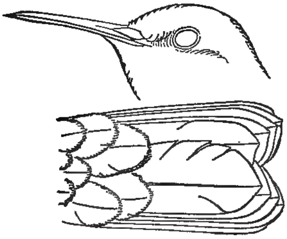
3. **Cœligena** clemenciæ, ♂.



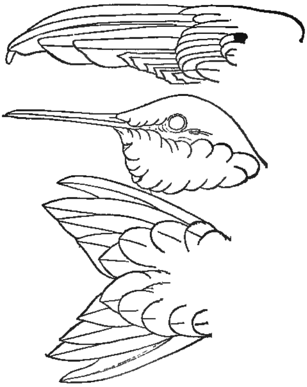
4. **Trochilus** alexandri.



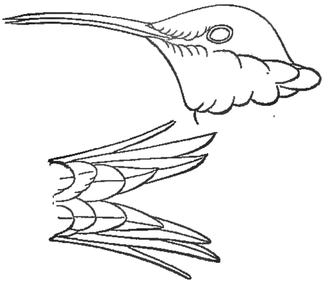
5. **Iache** latirostris, ♂.



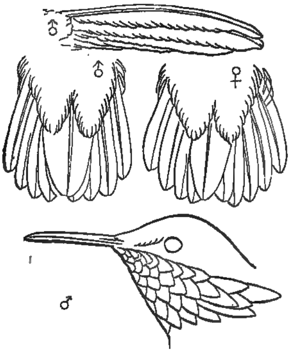
6. **Basilinna** leucotis, ♂.



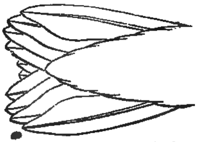
7. **Trochilus** colubris, ♂.



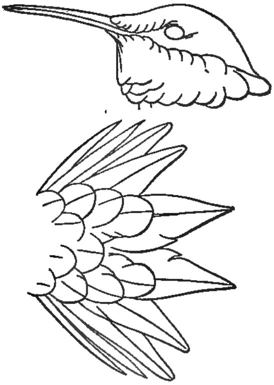
8. Trochilus (**Calothorax**) lucifer, ♂.



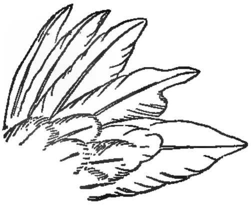
9. Trochilus (**Atthis**) heloisæ.



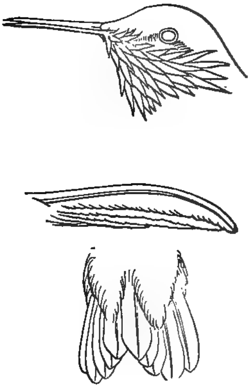
10. **Trochilus** colubris, ♀.



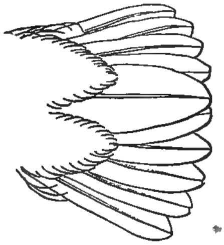
1. Trochilus (**Selasphorus**) alleni, ♂.



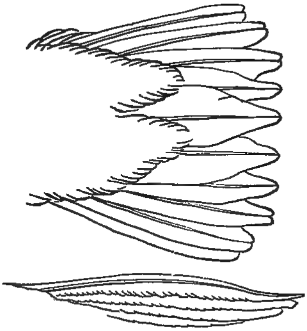
2. Trochilus (**Selasphorus**) rufus, ♂.



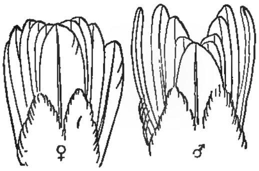
3. Trochilus (**Stellula**) calliope, ♂.



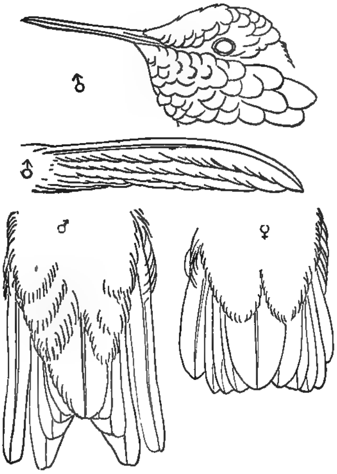
4. Trochilus (**Selasphorus**) platycercus, ♀.



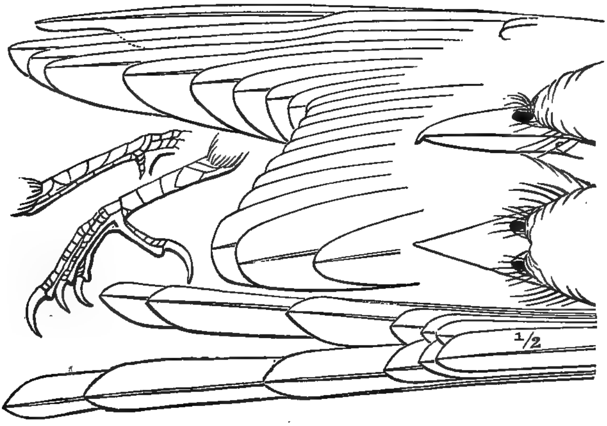
5. Trochilus (**Selasphorus**) platycercus, ♂.



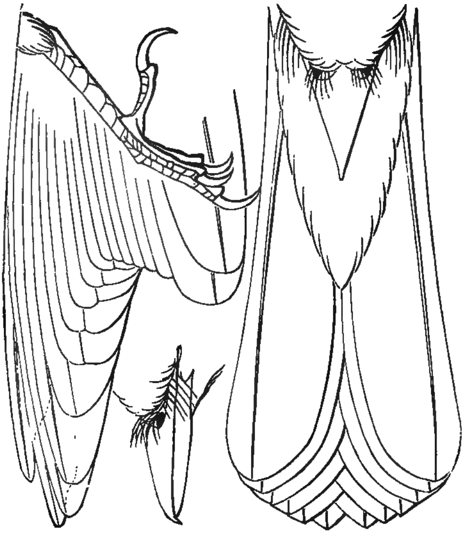
6. Trochilus (**Calypte**) costæ.



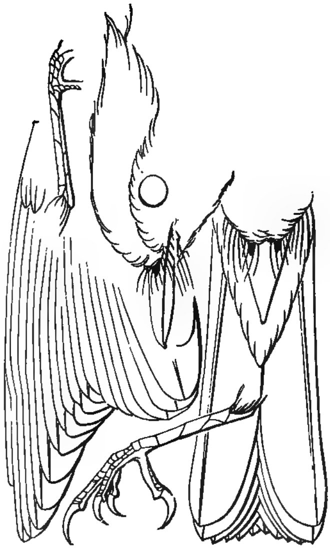
7. Trochilus (**Calypte**) annæ.



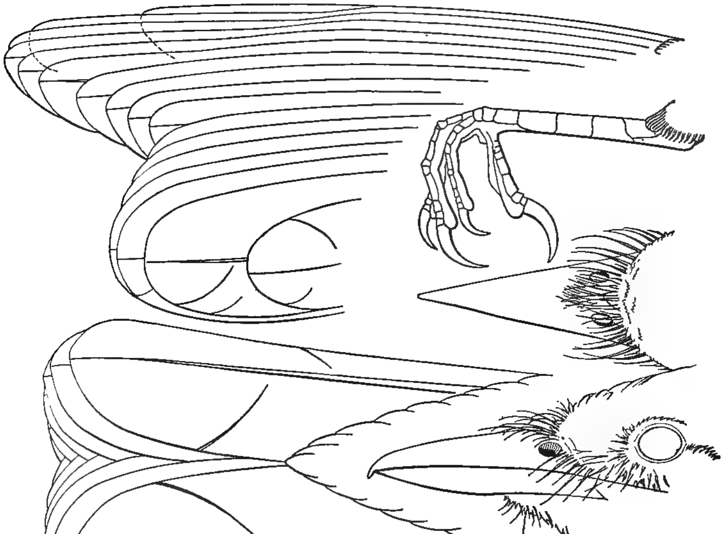
8 **Milvulus** forficatus.



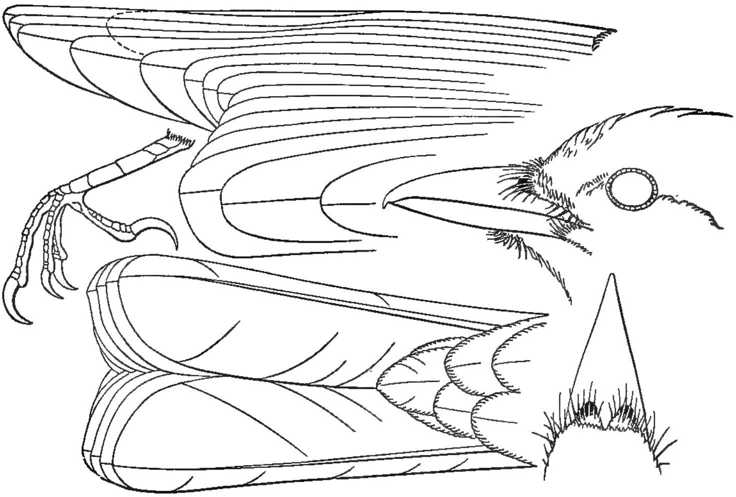
1. Tyrannus tyrannus.



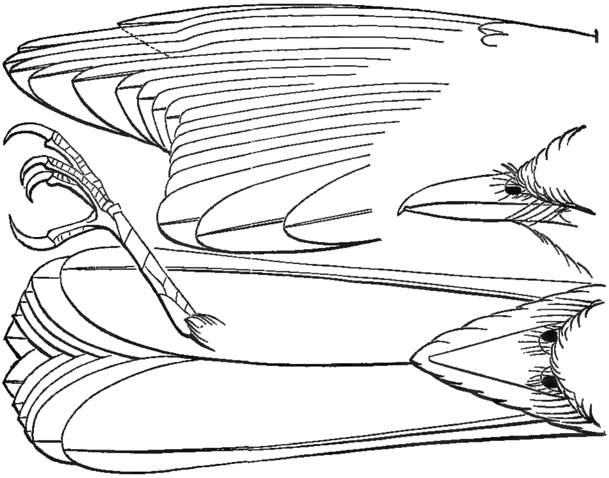
2. Pyrocephalus mexicanus.



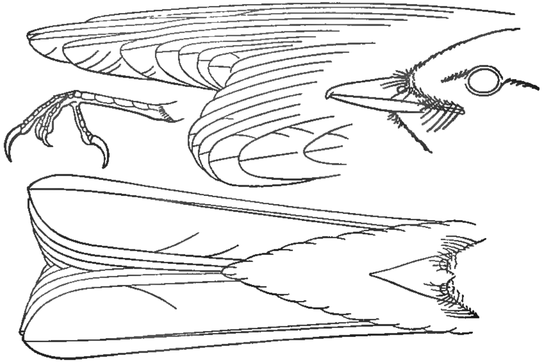
3. Pitangus derbianus.



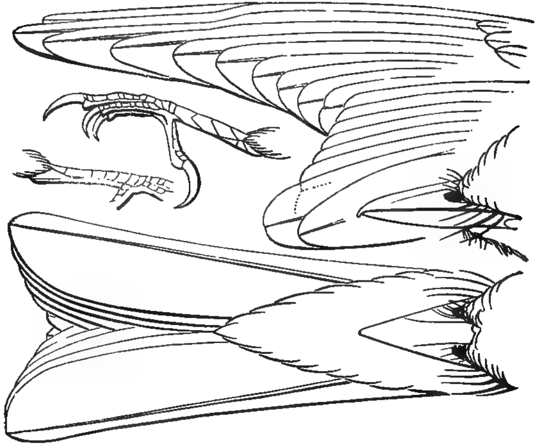
1. **Myiodynastes** luteiventris.



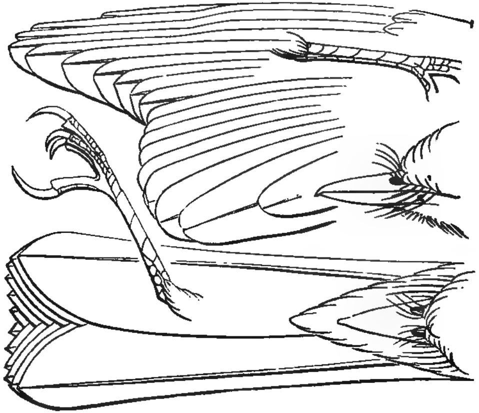
2. **Myiarchus** crinitus.



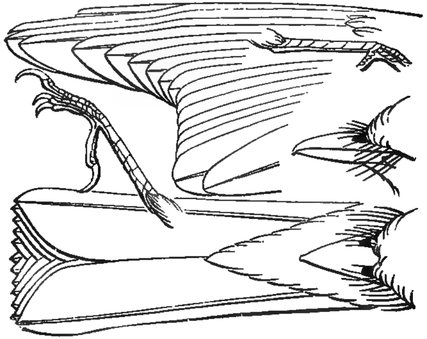
1. **Contopus** virens.



2. Contopus (**Nuttallornis**) borealis.

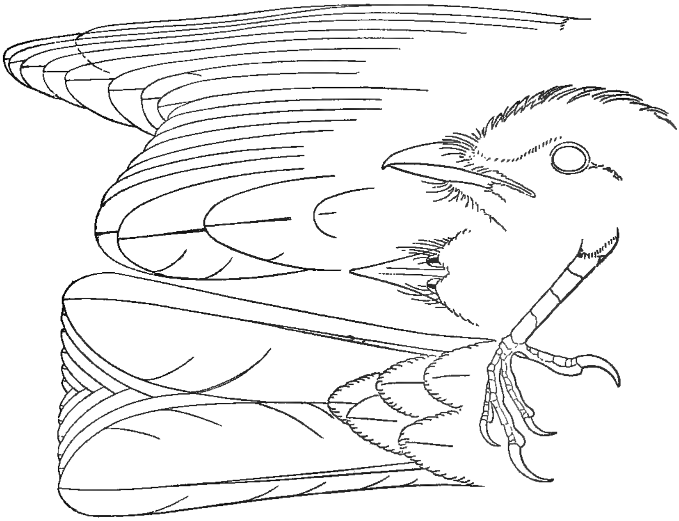


3. **Sayornis** nigricans.

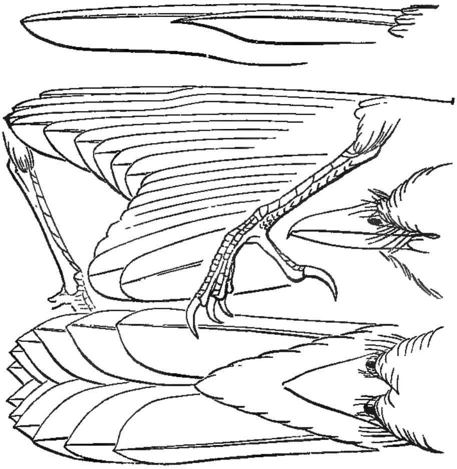


4. **Empidonax** acadicus.

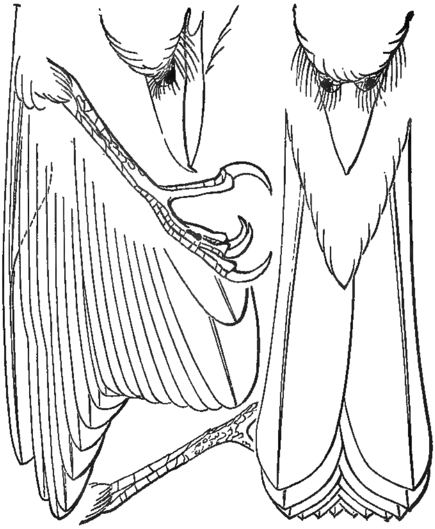
Plate XCV.



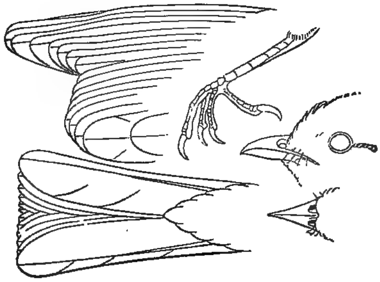
1. **Myiozetetes** texensis.



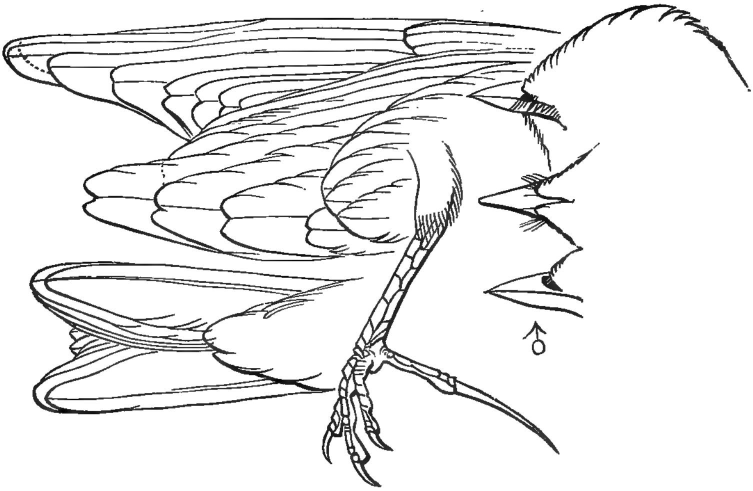
2. **Pachyrhamphus** major.



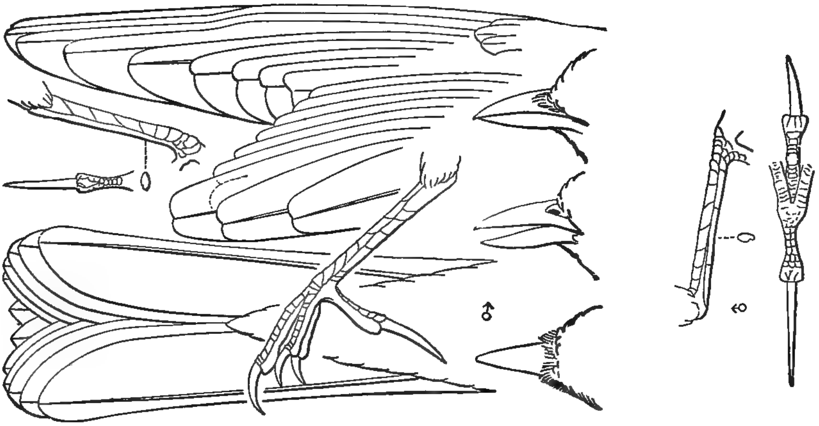
3. **Platypsaris** aglaiæ.



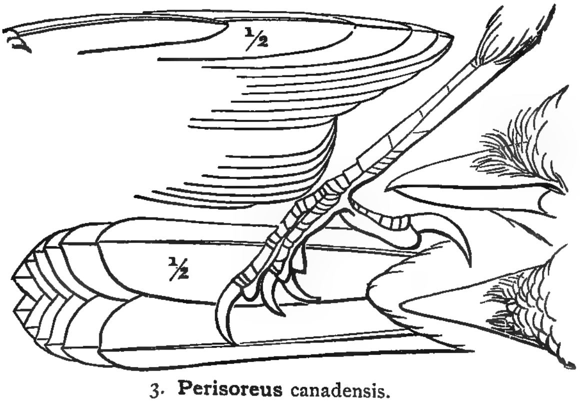
4 **Ornithion** imberbe.



1. **Alauda** arvensis.

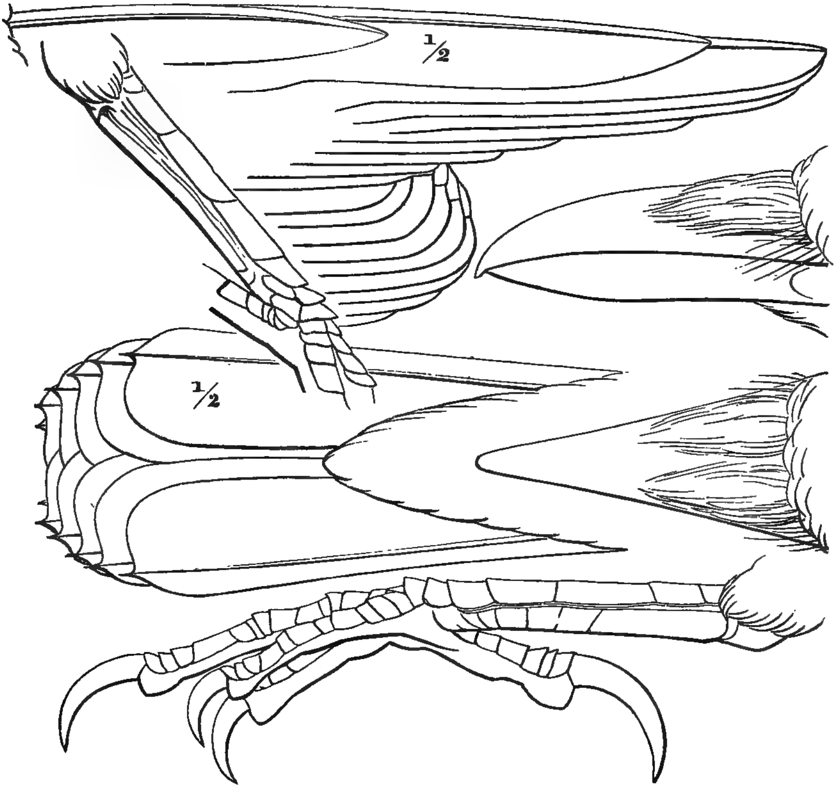


2. **Otocoris** alpestris.

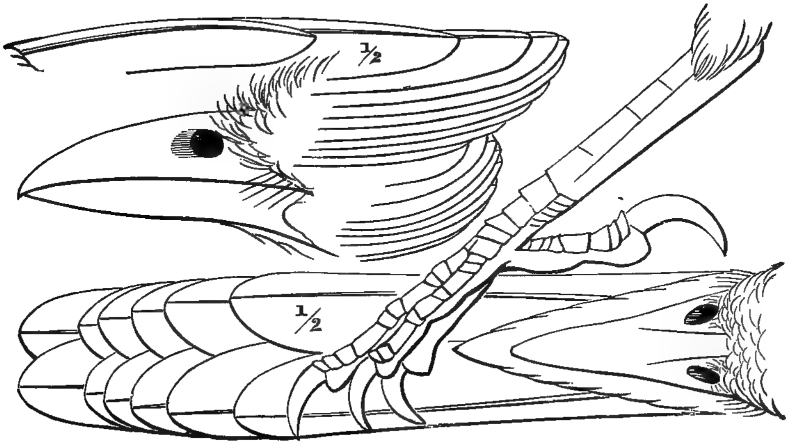


3. **Perisoreus** canadensis.

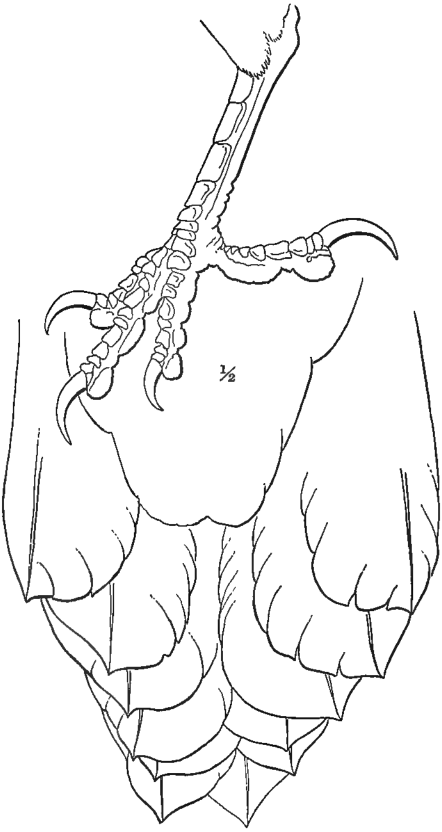
Plate XCVII.

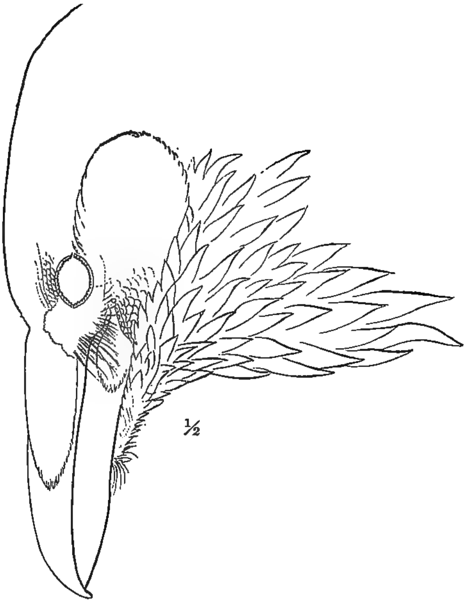


1. Corvus ("**Corone**") ossifragus.

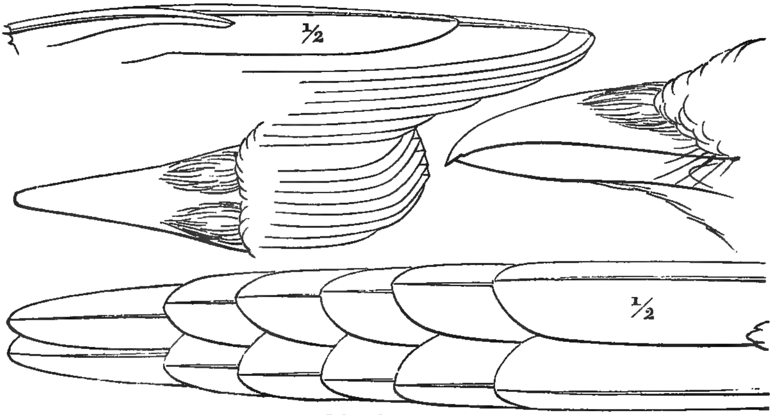


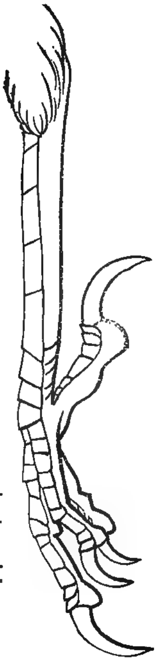
2. **Psilorhinus morio.**



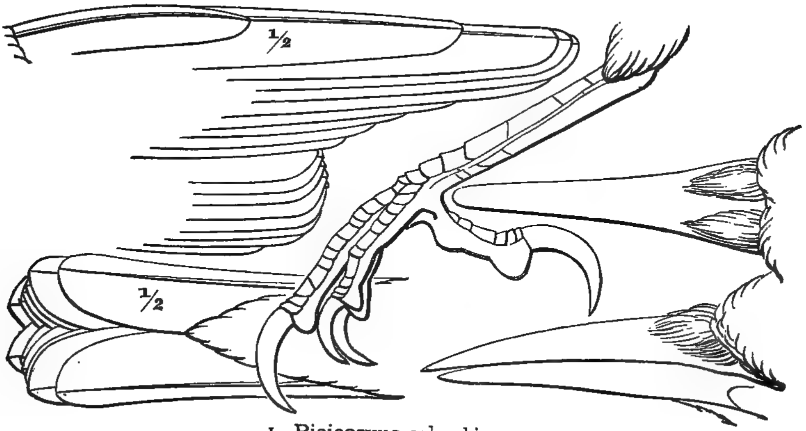


1. **Corvus** sinuatus.

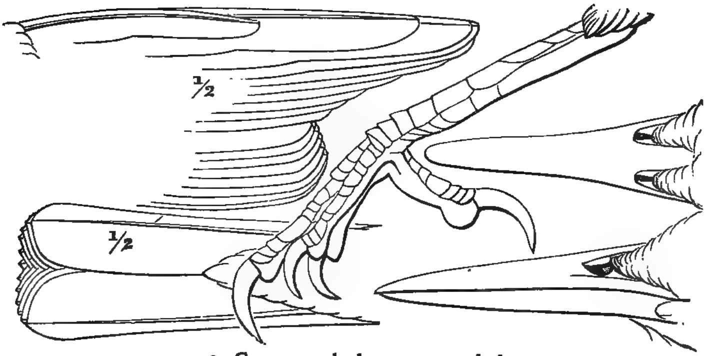




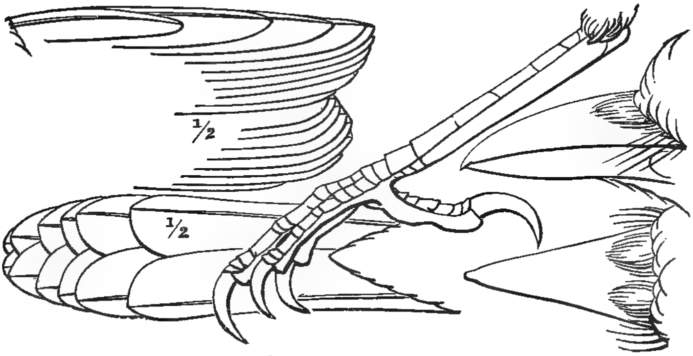
2. Pica hudsonica.



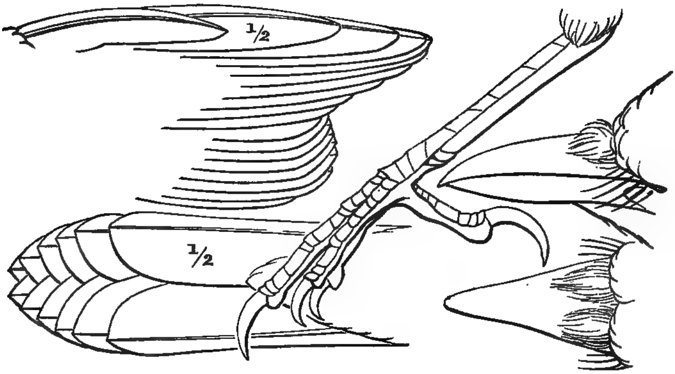
1. **Picicorvus** columbianus.



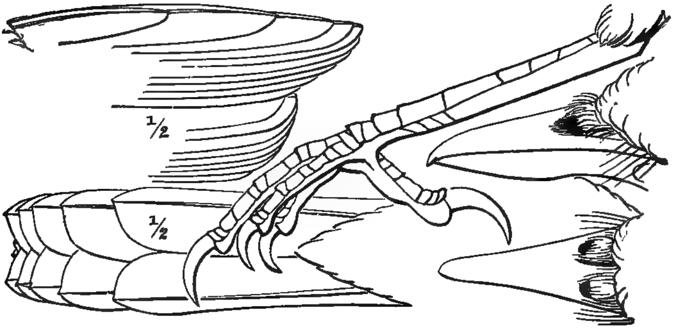
2. **Cyanocephalus** cyanocephalus.



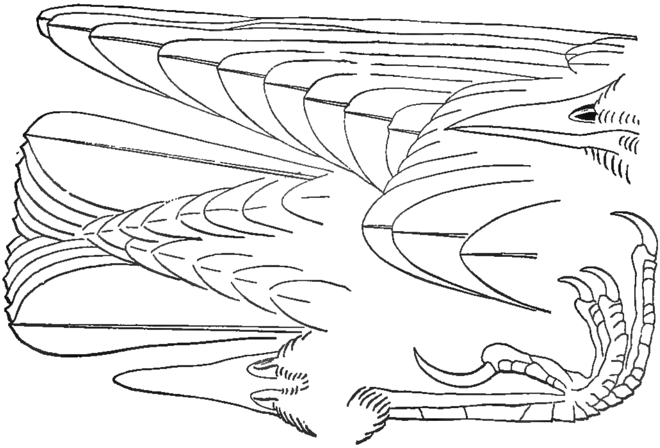
3. **Xanthoura** luxuosa.



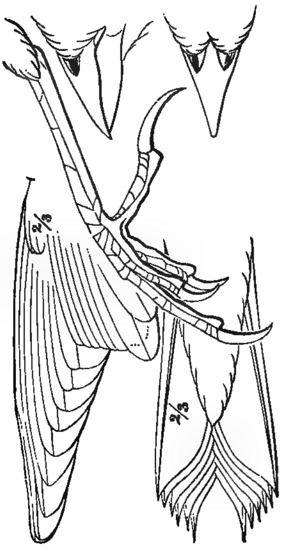
1. **Cyanocitta** cristata.



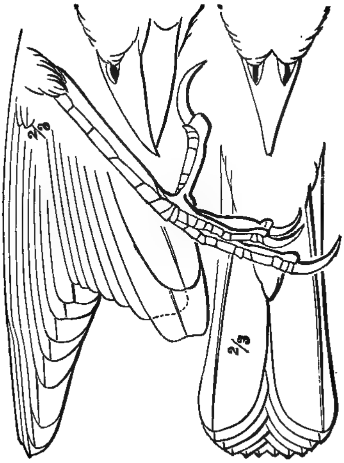
2. **Aphelocoma** californica.



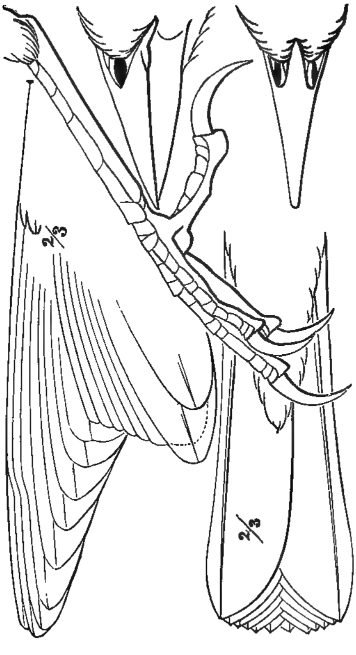
3. **Sturnus** vulgaris.



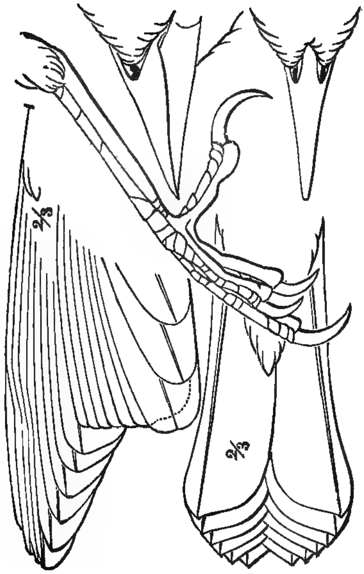
1. **Dolichonyx** oryzivorus.



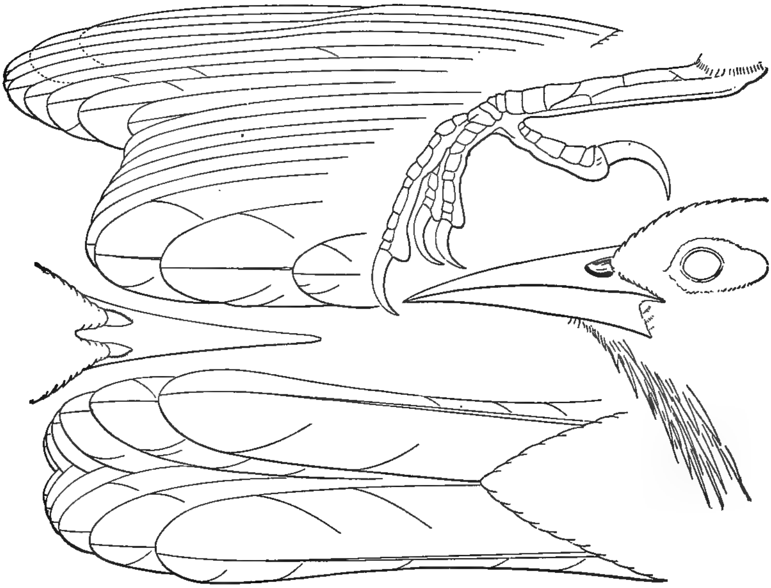
2. **Molothrus** ater.



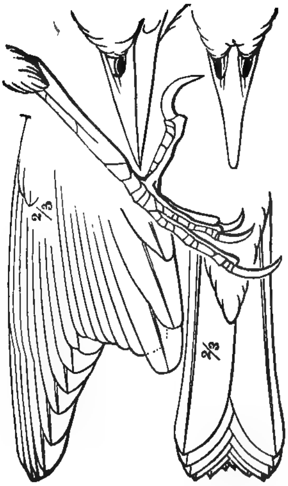
3. **Xanthocephalus** xanthocephalus.



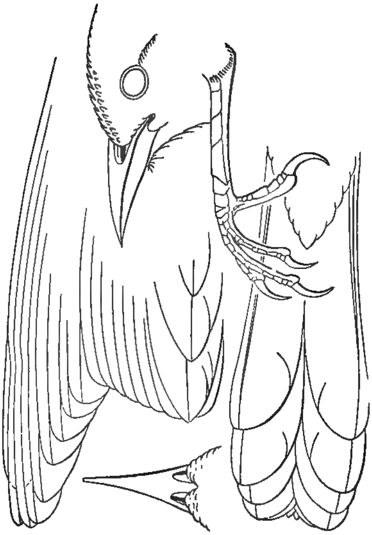
4. **Agelaius** phœniceus.



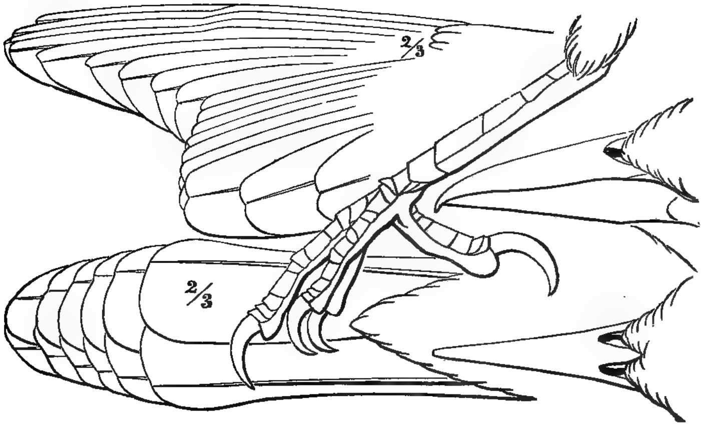
1. **Icterus** icterus.



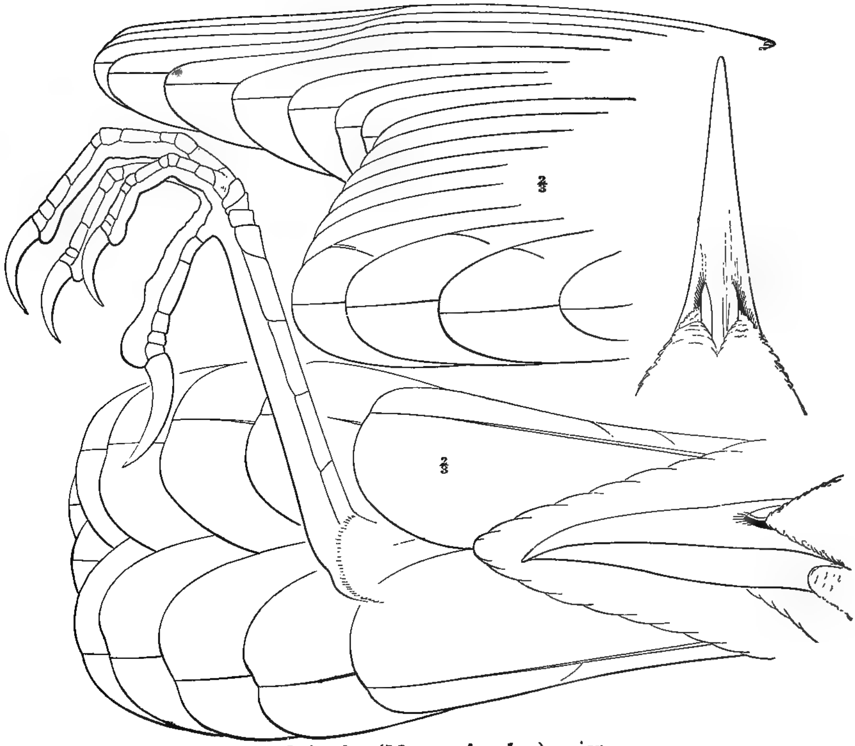
2. Icterus (**Yphantes**) galbula.



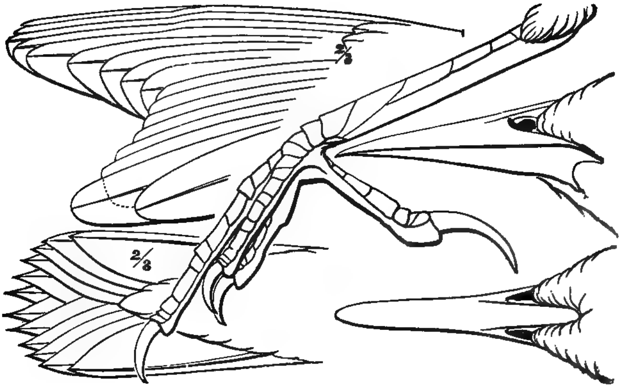
3. Icterus (**Pendulinus**) spurius.



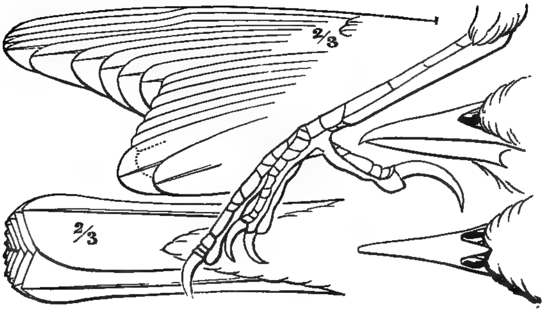
1. **Quiscalus** quiscula.



2. Quiscalus (**Megaquiscalus**) major.

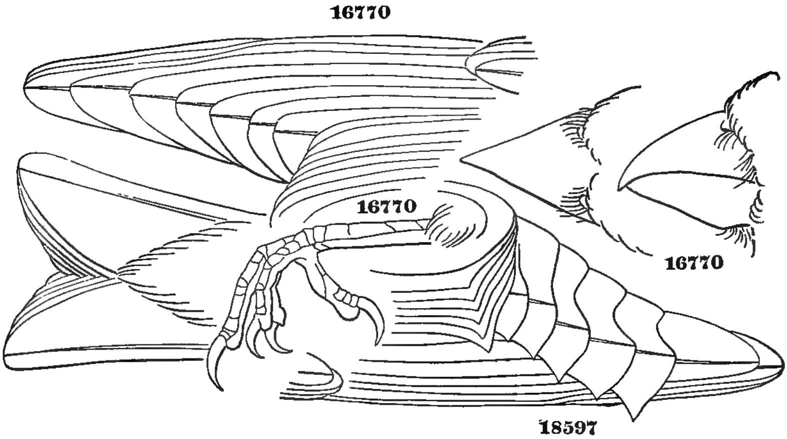


1. **Sturnella** magna.

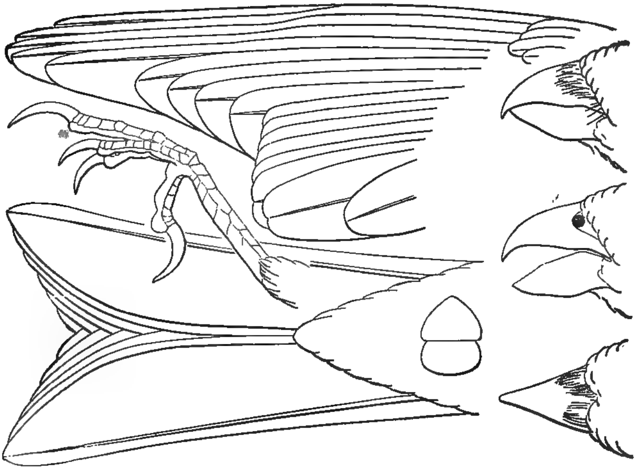


2. **Scolecophagus** carolinus.

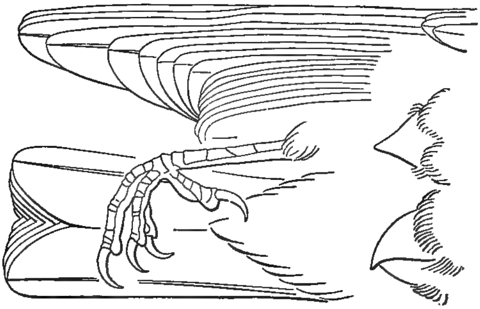
Plate CV.


16770
16770
16770
18597

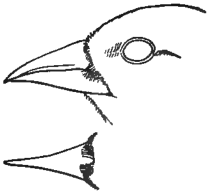
1. Coccothraustes (**Hesperiphona**) vespertinus (No. 16770).
(No. 18597 = Coccothraustes coccothraustes.)



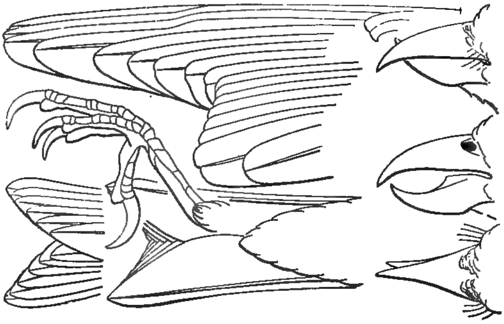
2. **Pinicola** canadensis.



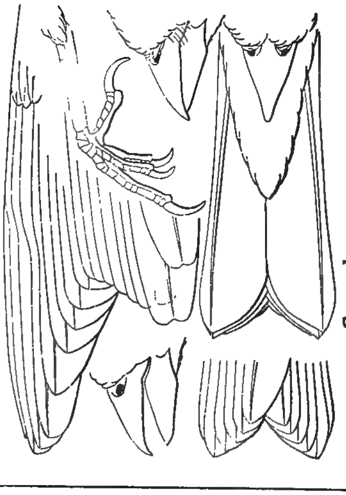
3. **Pyrrhula** cassini.



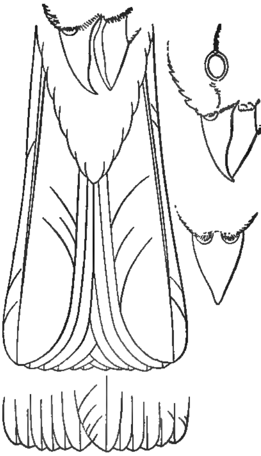
4. **Carduelis** carduelis.



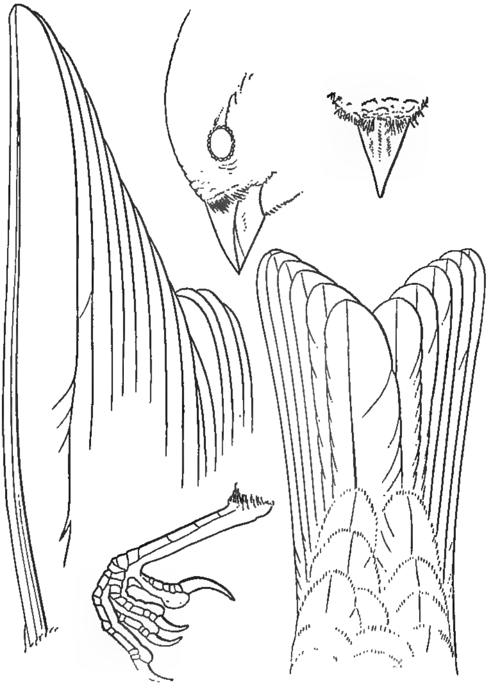
1. **Loxia** minor.



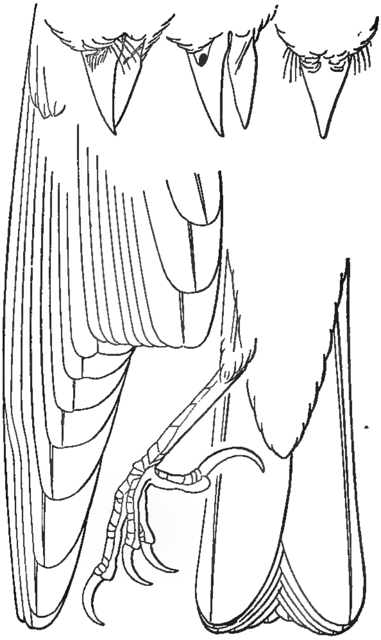
2. **Carpodacus** purpure[illegible].



3. Carpodacus (**Burrica**) frontalis.

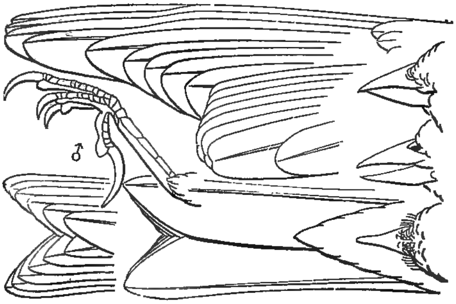


4. **Leucosticte (Hypolia)** arctoa.

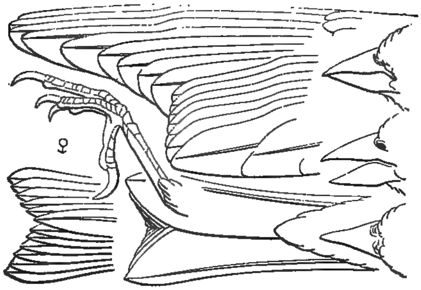


5. **Leucosticte** tephrocotis.

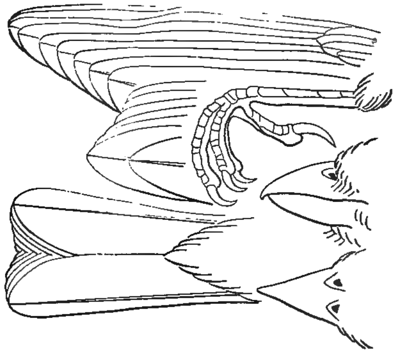
Plate CVII.



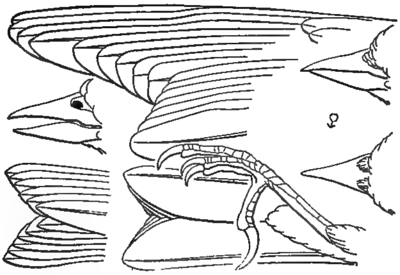
1. **Acanthis** linaria.



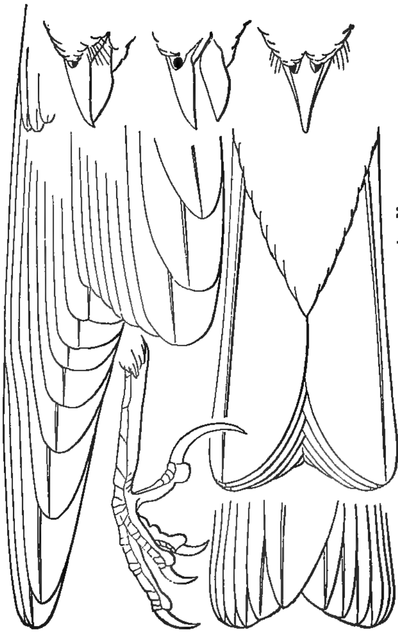
3. Spinus (“**Astragalinus**”) tristis.



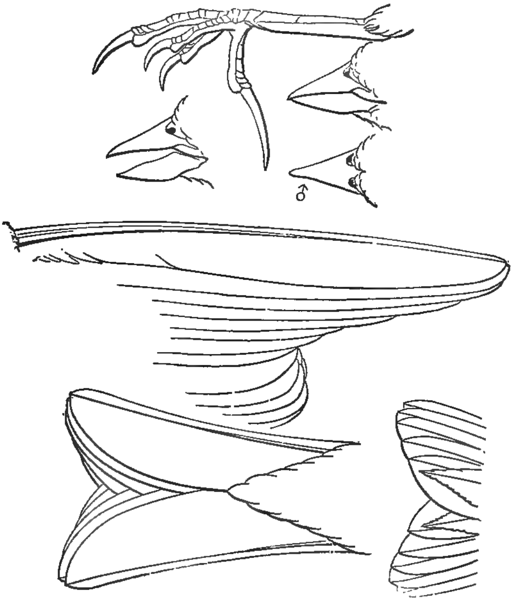
2. **Passer** domesticus.



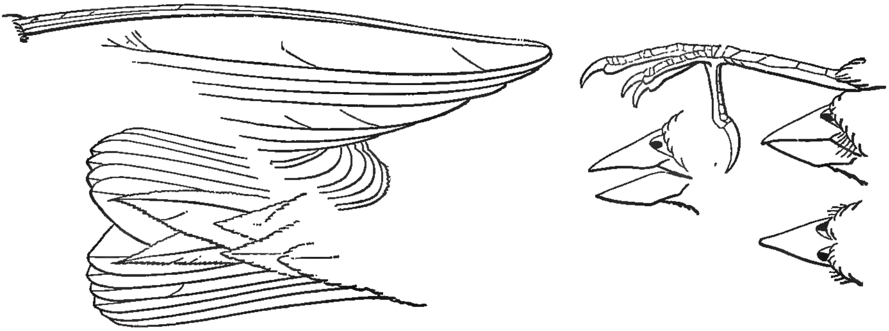
4. **Spinus** pinus.



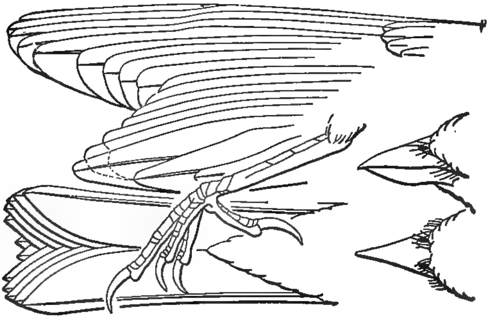
5. **Plectrophenax** nivalis.



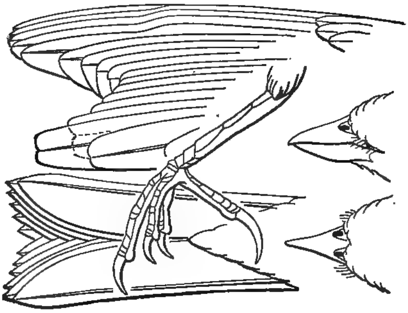
6. **Calcarius** lapponicus.



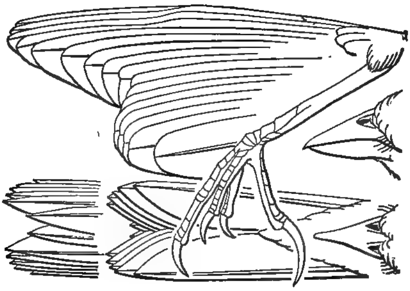
1. **Rhynchophanes** mccownii.



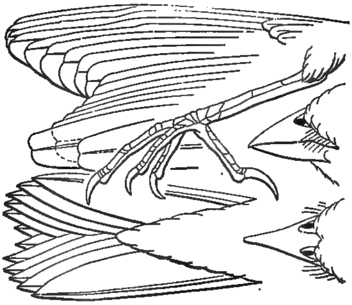
2. **Poocætes** gramineus.



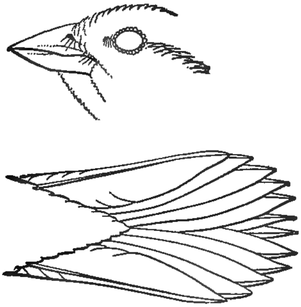
3. Ammodramus (**Passerculus**) savanna.



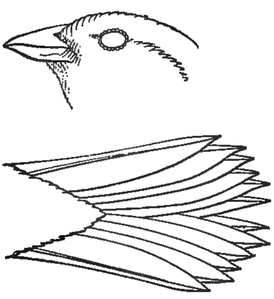
4. Ammodramus (**Centronyx**) bairdii.



5. Ammodramus (**Coturniculus**) passerinus.

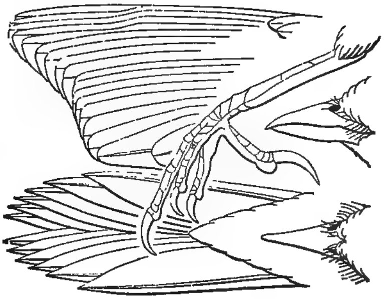


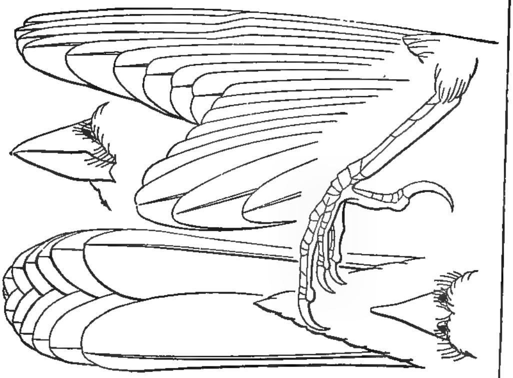
6. A. (**Coturniculus**) henslowi.

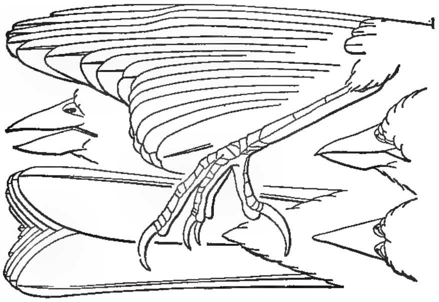


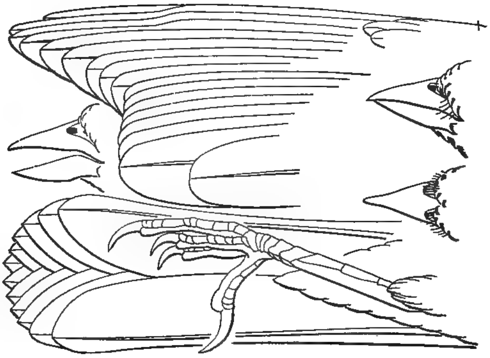
7. A. (**Coturniculus**) lecontei.

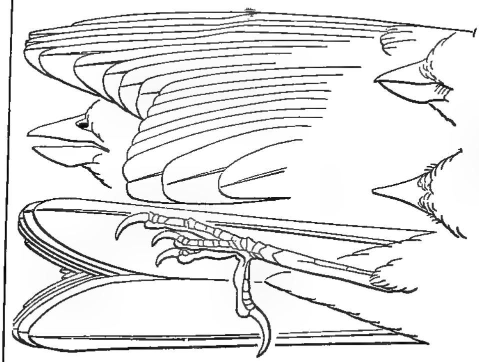
Plate CIX.

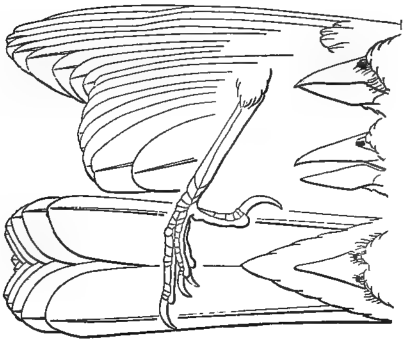

1. **Ammodramus** caudacutus.

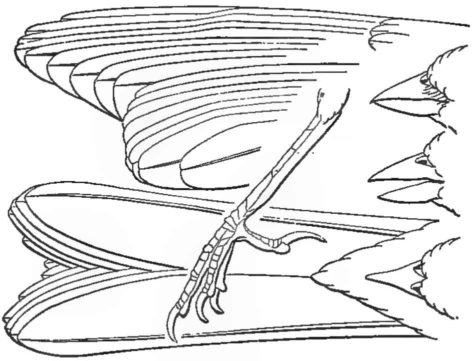

2. **Chondestes** grammicus.

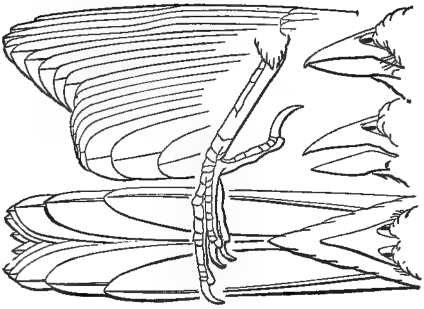

3. **Junco** hyemalis.


4 **Zonotrichia** leucophrys.

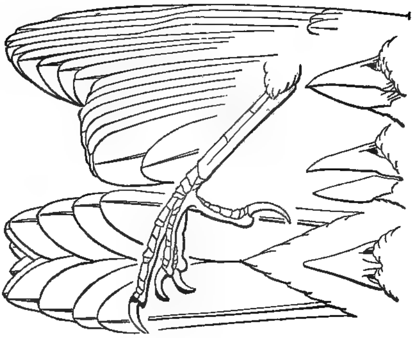

5. **Spizella** monticola.


6. **Amphispiza** bilineata.

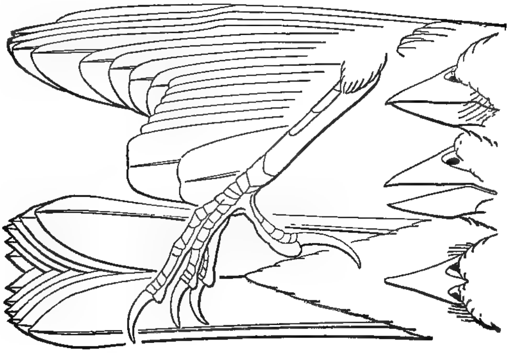

7. **Amphispiza** belli.



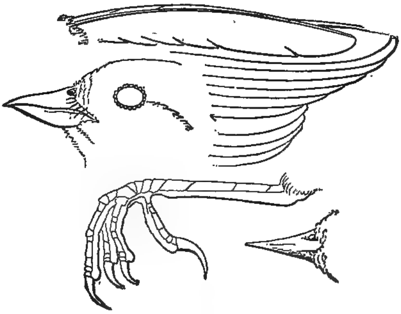
1. **Peucæa** æstivalis.



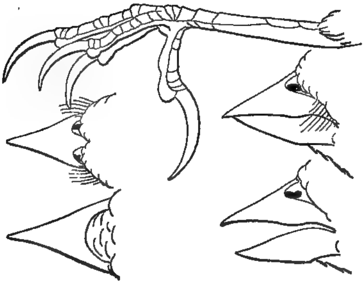
2. **Melospiza** fasciata.



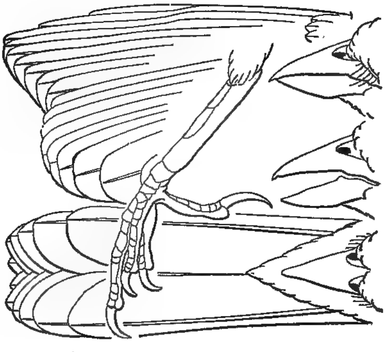
3. **Passerella** iliaca.



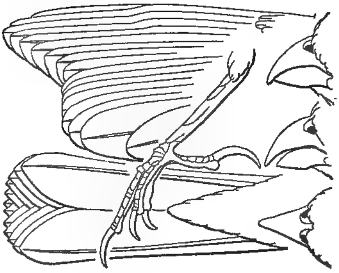
4. Melospiza (“ **Helospiza**”) palustris.



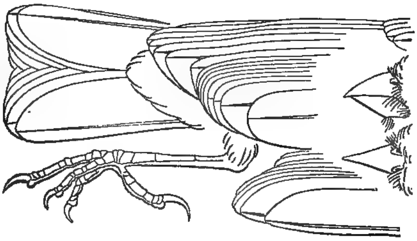
5. **Passerella** megarhyncha.



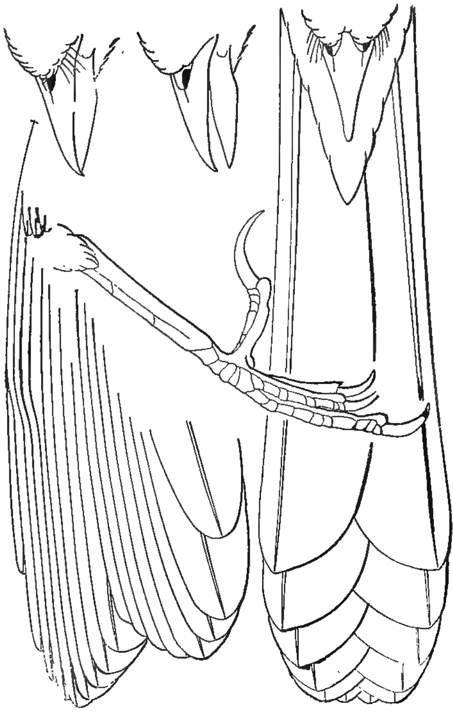
6. **Embernagra** rufivirgata.



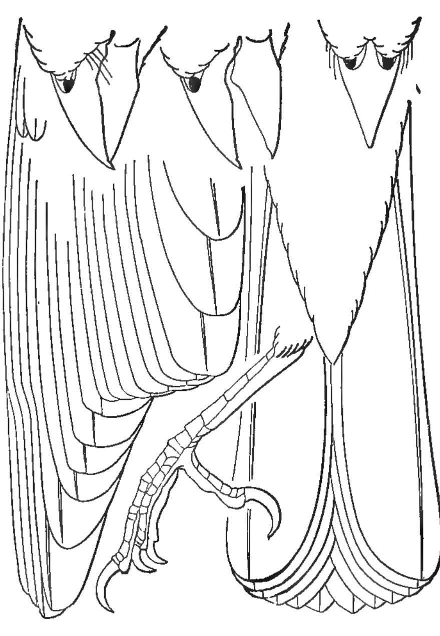
7. **Sporophila** moreleti.



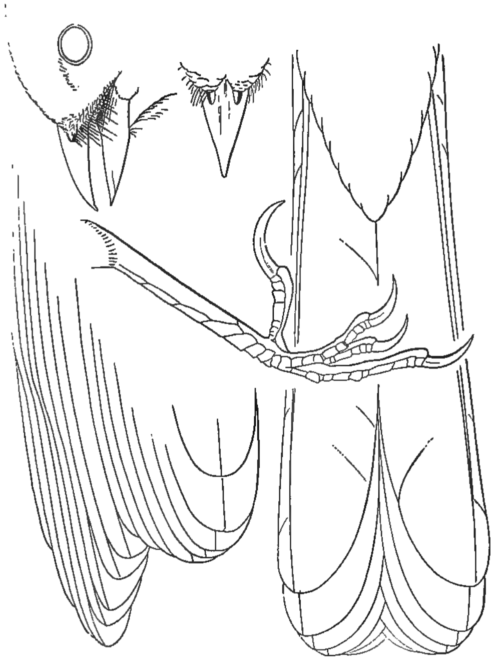
8. **Euetheia** bicolor.



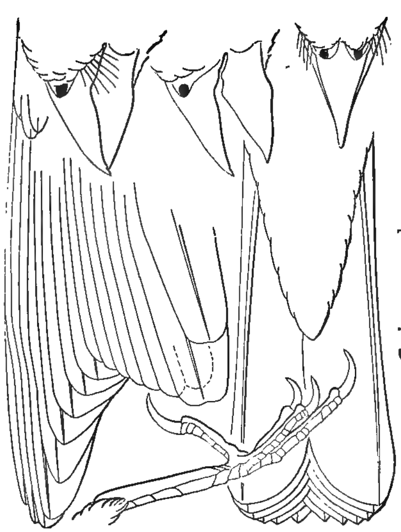
1. **Pipilo** crissalis.



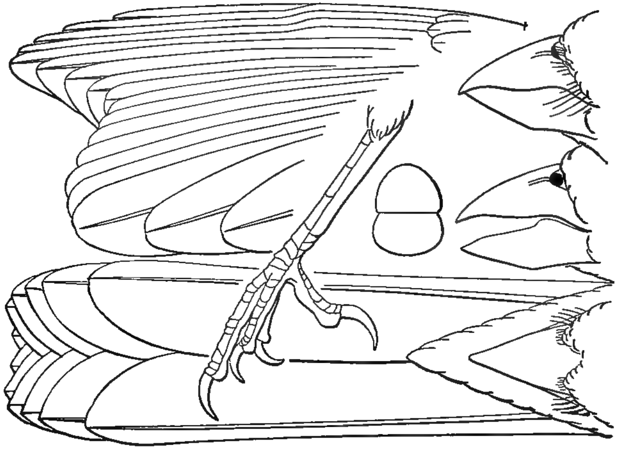
2. **Habia** ludoviciana.



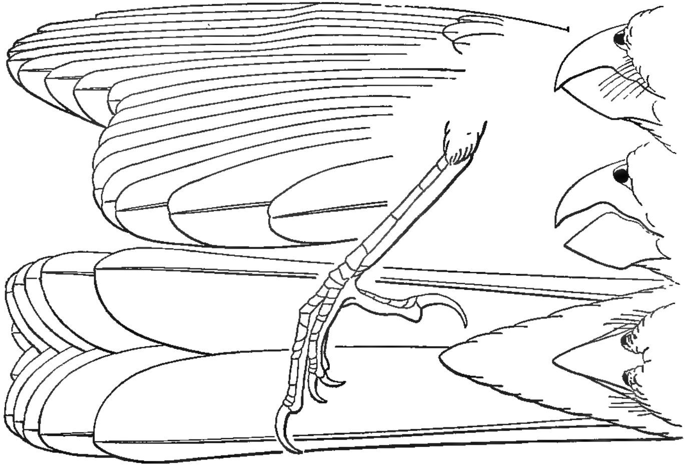
3. **Pipilo** erythrophthalmus.



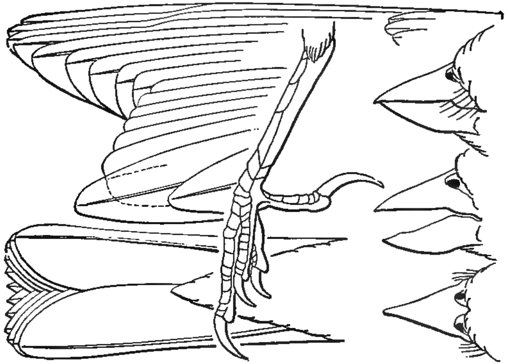
4. **Guiraca** cærulea.



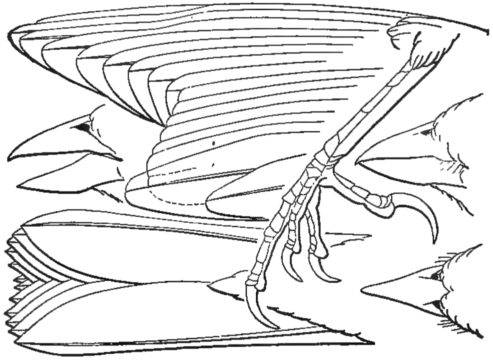
1. **Cardinalis** cardinalis.



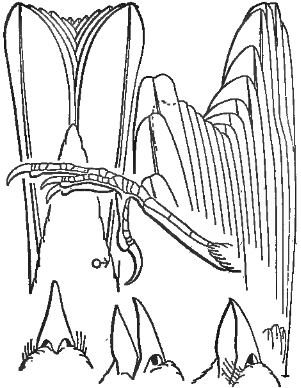
2. **Pyrrhuloxia** sinuata.



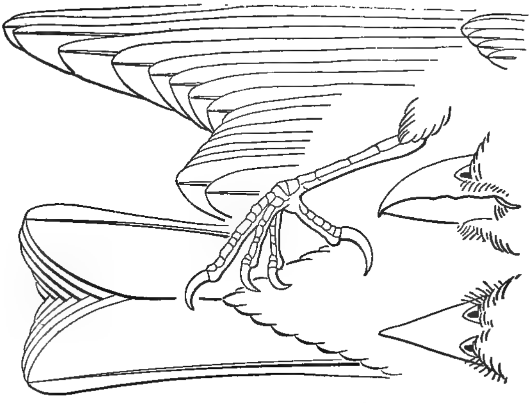
3. **Calamospiza** melanocorys.



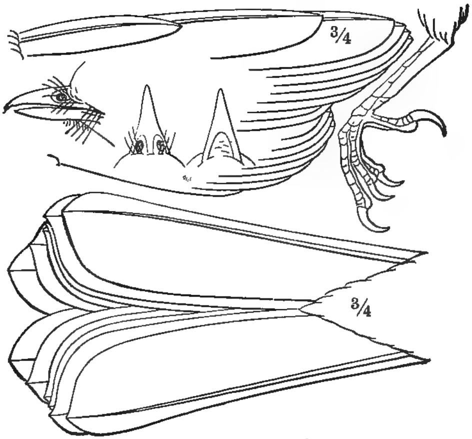
4. **Spiza** americana.



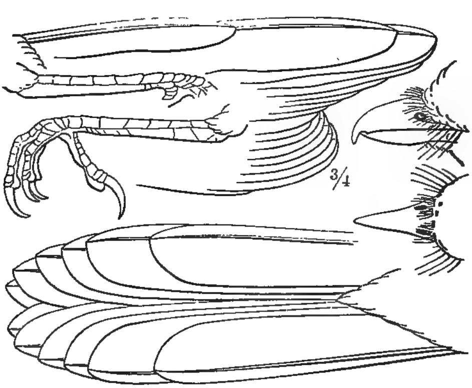
5. **Passerina** cyanea.



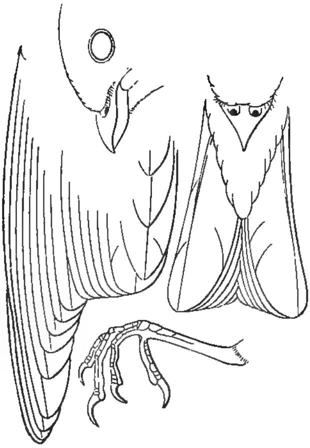
1. **Piranga** erythromelas.



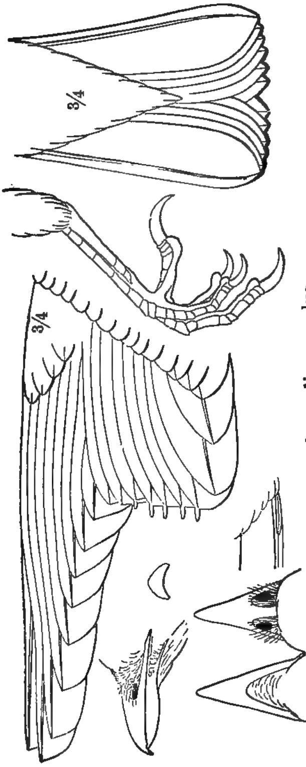
2. **Phainopepla** nitens.



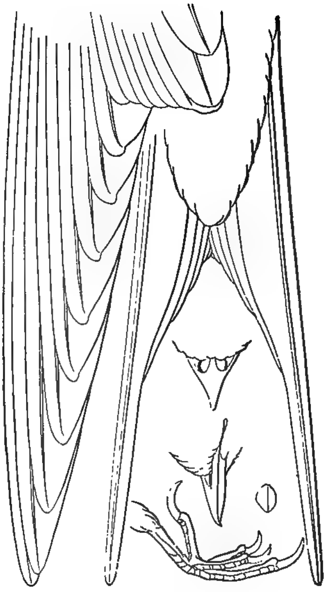
3. **Lanius** excubitorides.



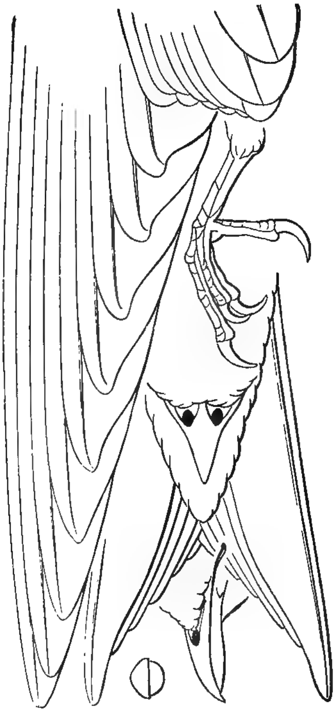
5. **Euphonia** elegantissima.



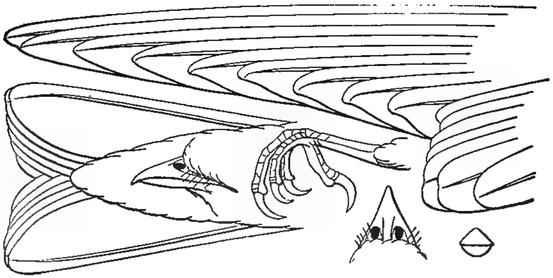
4. **Ampelis** garrulus.



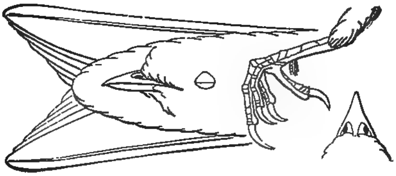
2. **Chelidon** erythrogaster.



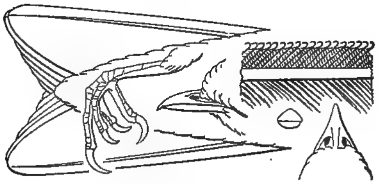
1. **Progne** subis.



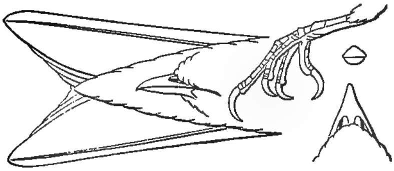
3. **Petrochelidon** lunifrons.



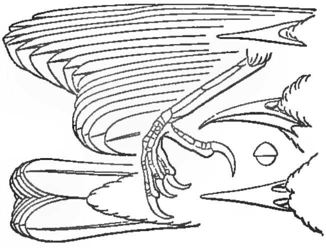
4. **Clivicola** riparia.



5. **Stelgidopteryx** serripennis.

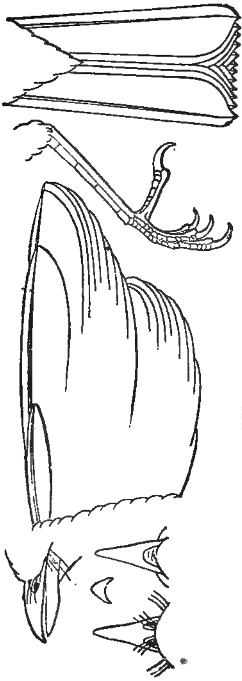


6. **Tachycineta** thalassina.

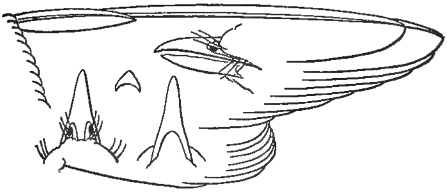


7. **Certhiola** flaveola.

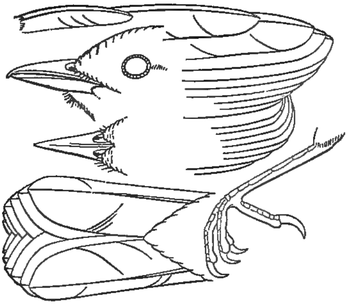
Plate CXV.



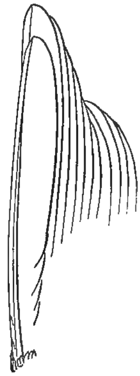
2. **Vireo** noveboracensis.



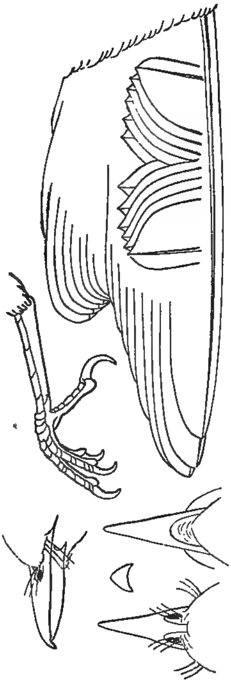
3. Vireo (**Lanivireo**) solitarius.



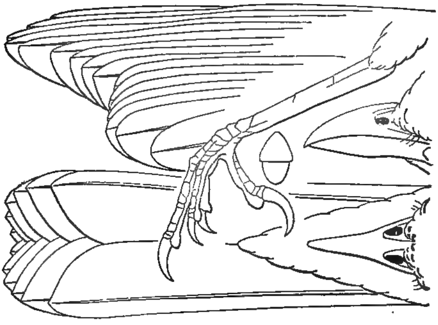
4. **Hylophilus** decurtatus.



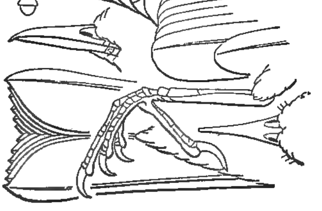
5. Vireo (**Vireosylvia**) philadelphica.



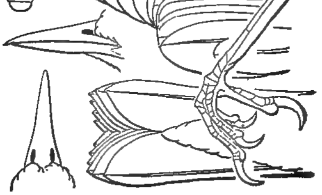
1. Vireo (**Vireosylvia**) olivacea.



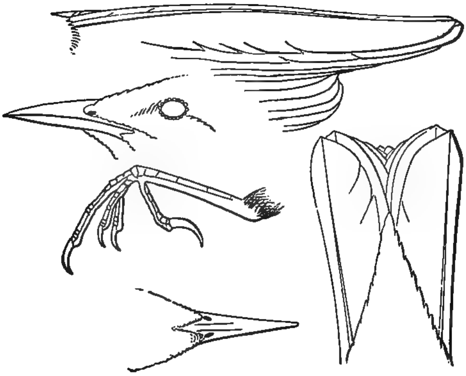
6. **Icteria** virens.



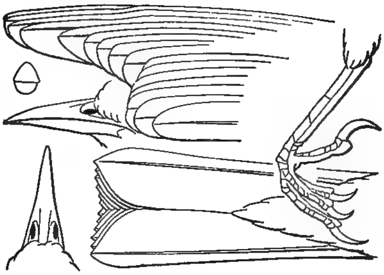
7. **Mniotilta** varia.



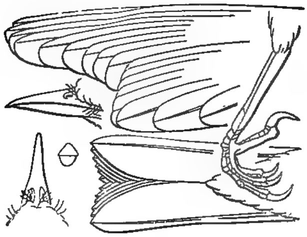
8. **Protonotaria** citrea.



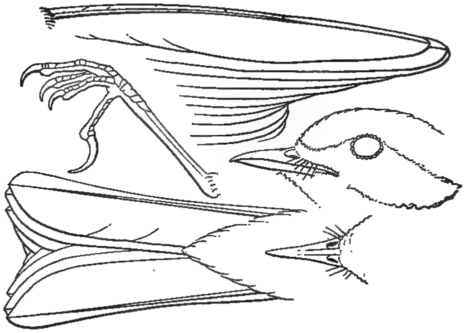
1. **Helinaia** swainsoni.



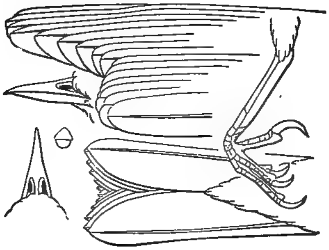
2. **Helmitherus** vermivorus.



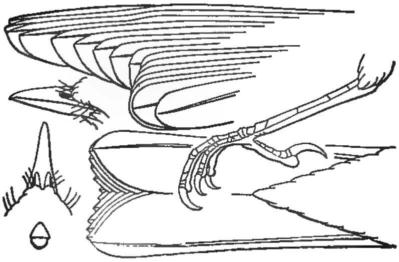
3. **Compsothlypis** americana.



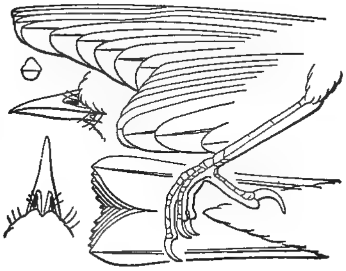
4. Dendroica (**Peucedramus**) olivacea.



5. **Helminthophila** ruficapilla.

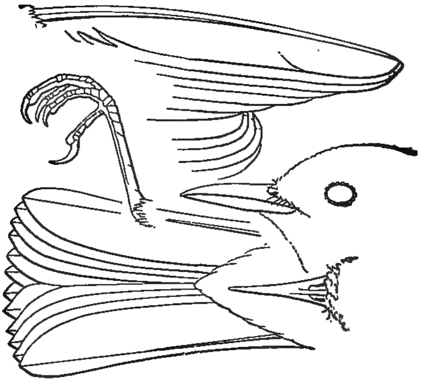


6. **Dendroica** coronata.

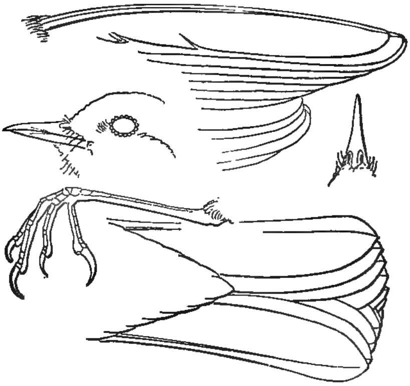


7. Dendroica (**Perissoglossa**) tigrina.

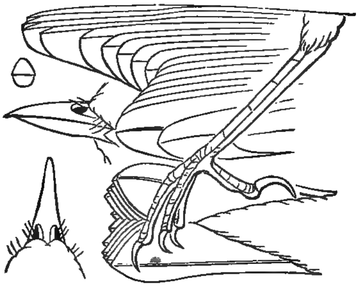
Plate CXVII.



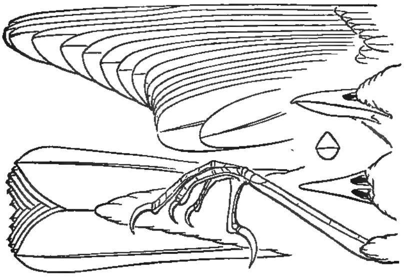
1. **Dendroica** dominica.



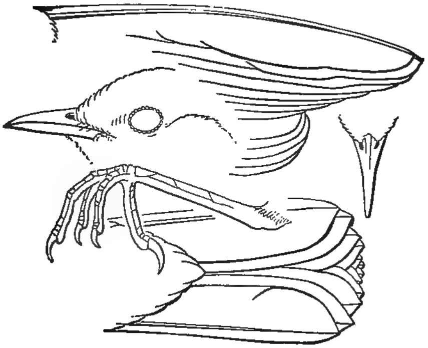
2. **Dendroica** palmarum.



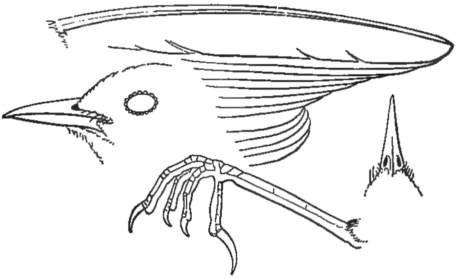
3. **Seiurus** aurocapillus.



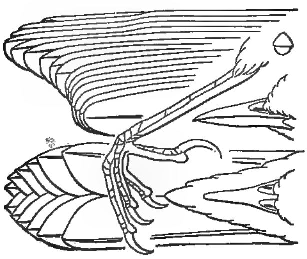
4. Geothlypis (**Oporornis**) formosa.



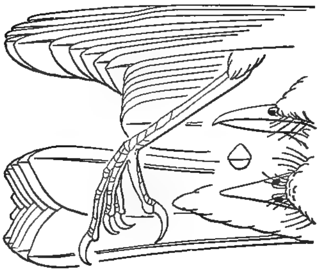
5. Geothlypis (**Oporornis**) philadelphia.



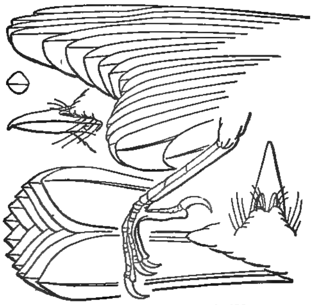
6. Geothlypis (**Oporornis**) agilis.



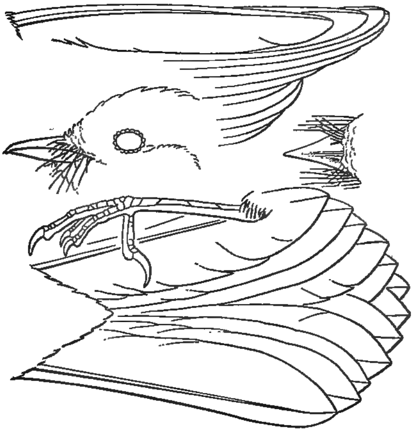
7. **Geothlypis** trichas.



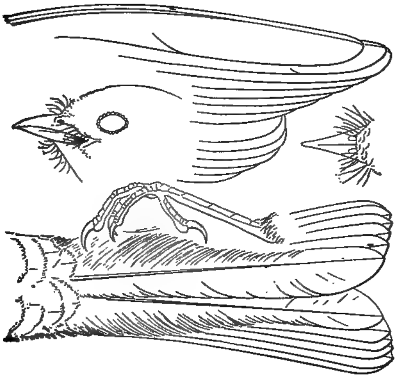
8. **Sylvania** mitrata.



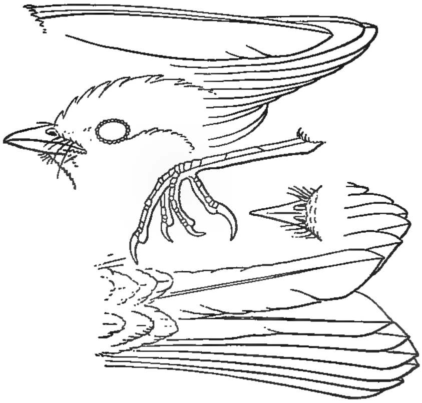
1. **Setophaga** ruticilla.



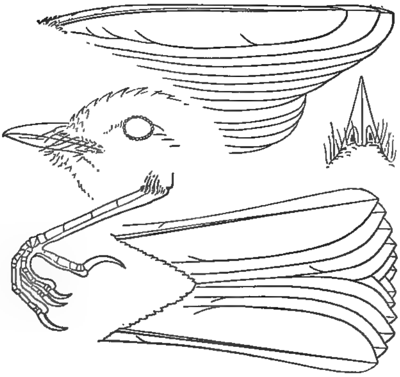
2. Setophaga (**Myioborus**) miniata.



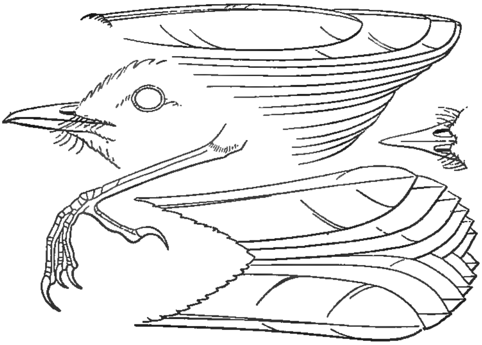
3. **Cardellina** rubrifrons.



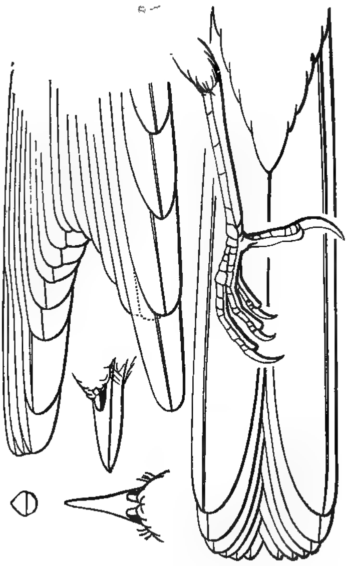
4. **Ergaticus** ruber.



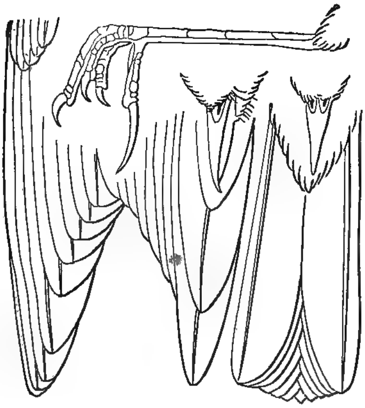
5. **Basileuterus** culicivorus.



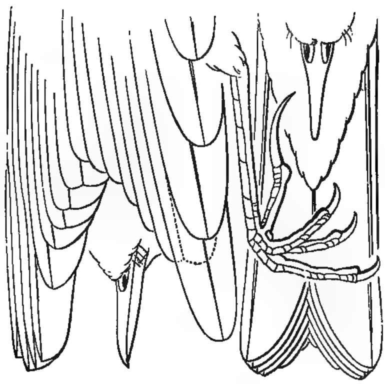
6. Basileuterus (**Idiotes**) belli.



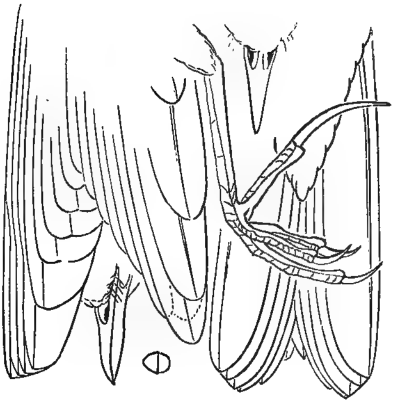
1. **Motacilla** alba.



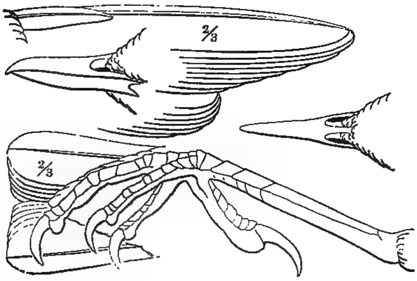
2. **Budytes** flavus.



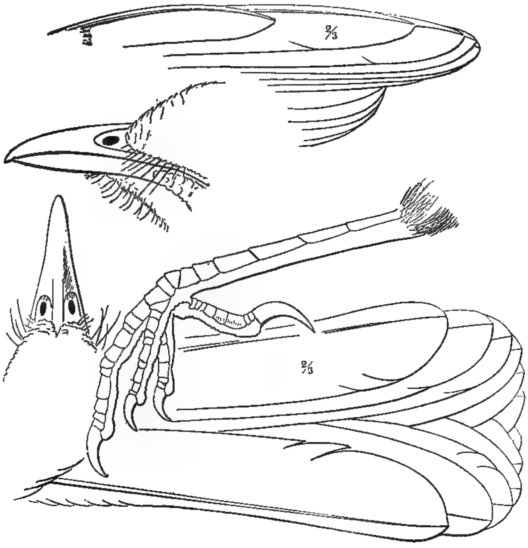
3. **Anthus** pennsilvanicus.



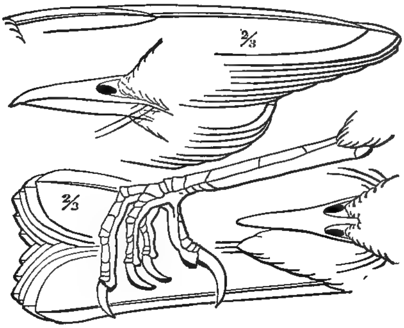
4. **Anthus** (**Neocorys**) spraguei.



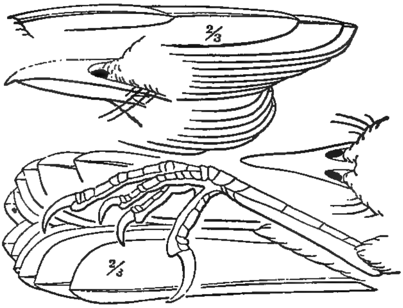
5. **Cinclus** mexicanus.



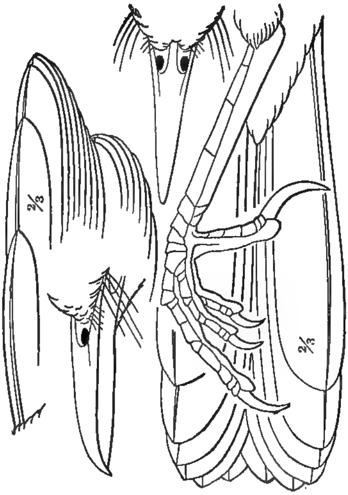
6. **Mimodes** graysoni.



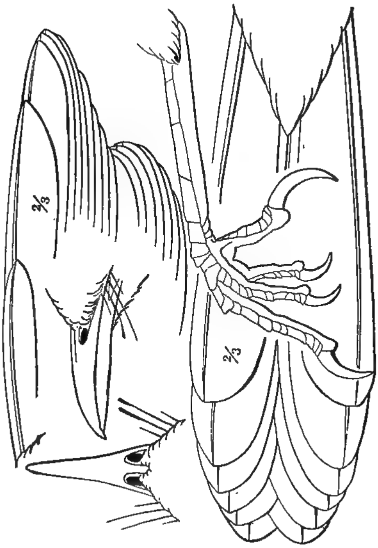
1. **Oroscoptes** montanus.



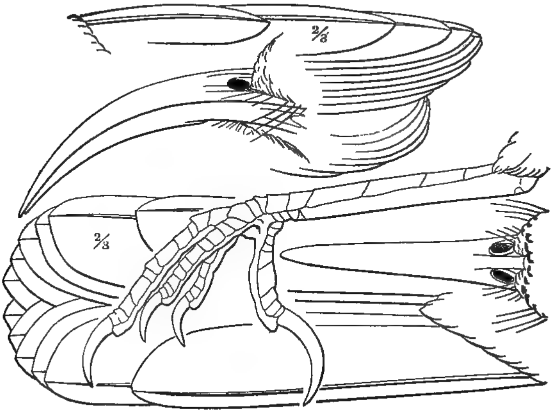
2. **Galeoscoptes** carolinensis.



3. **Harporhynchus (Methriopterus)** rufus.

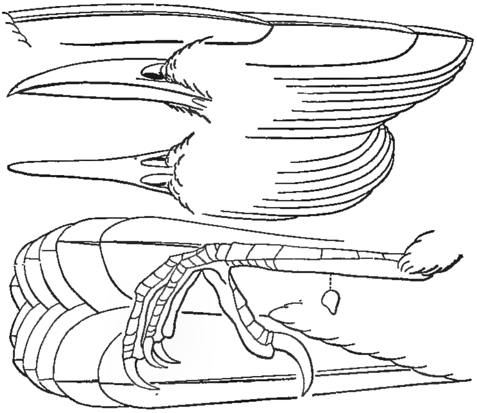


4. **Mimus** polyglottos.

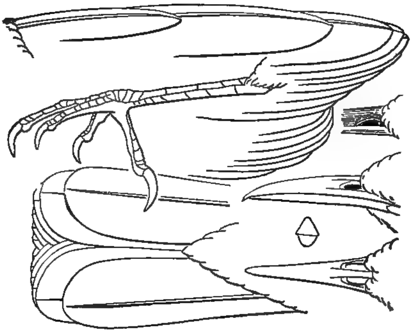


5. **Harporhynchus** redivivus.

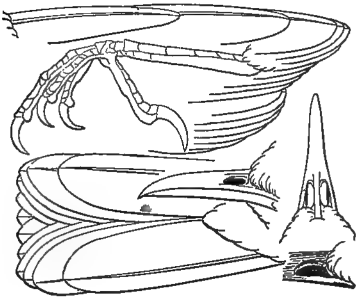
Plate CXXI.



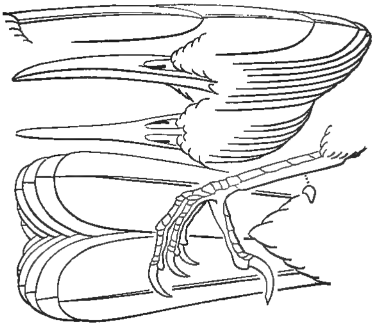
1. **Campylorhynchus** brunneicapillus.



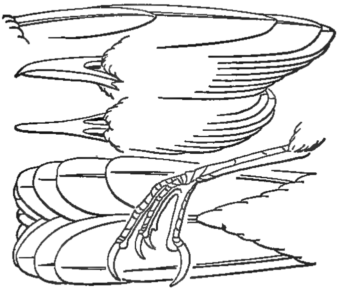
2. **Salpinctes** obsoletus.



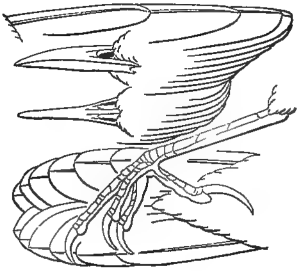
3. **Thryothorus** ludovicianus.



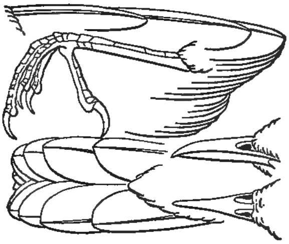
4. **Catherpes** mexicanus.



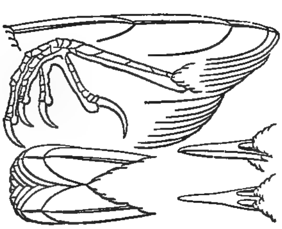
5. Thryothorus (**Thryomanes**) bewickii.



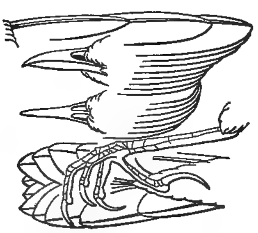
6. Cistothorus (**Telmatodytes**) palustris.



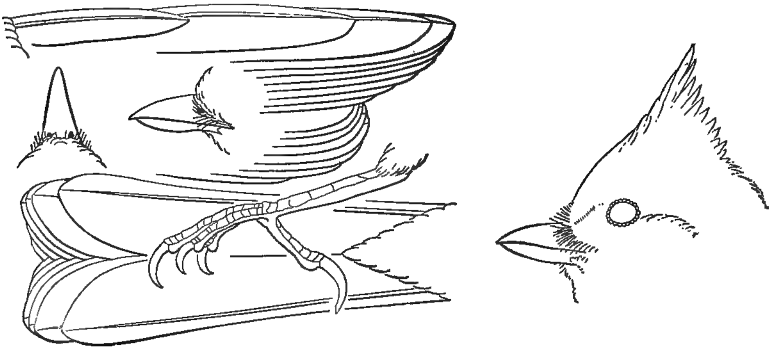
7. **Troglodytes** aëdon.



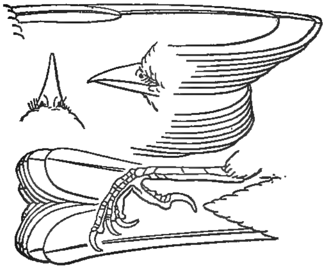
8. Troglodytes (**Anorthura**) hiemalis.



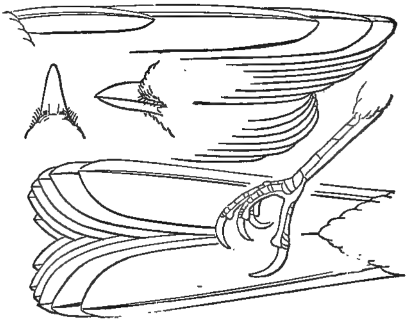
9. **Cistothorus** stellaris.



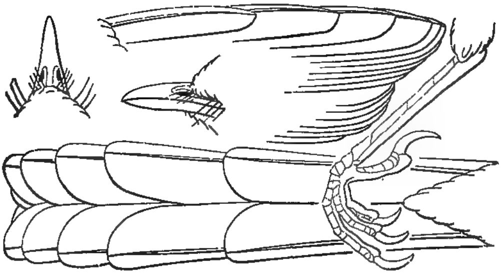
1. Parus (**Lophophanes**) bicolor.



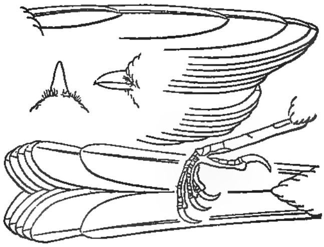
2. **Auriparus** flaviceps.



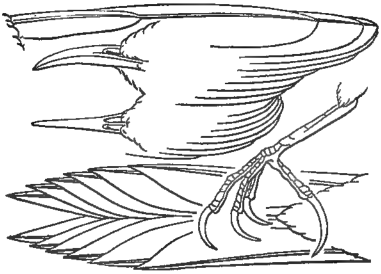
3. **Parus** atricapillus.



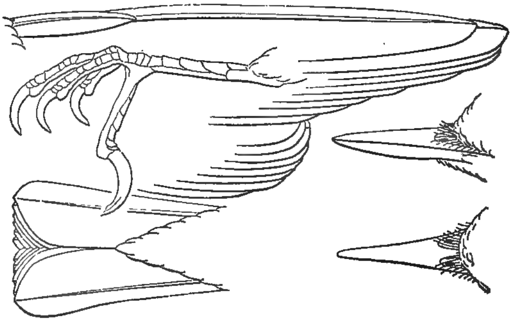
4. **Chamæa** fasciata.



5. **Psaltriparus** minimus.

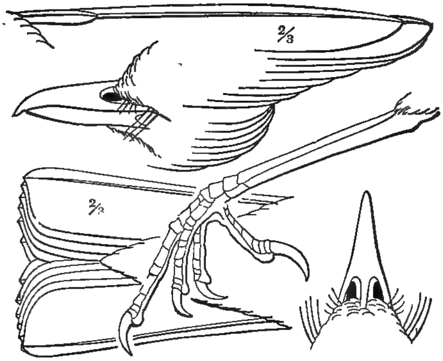


6. **Certhia** americana.

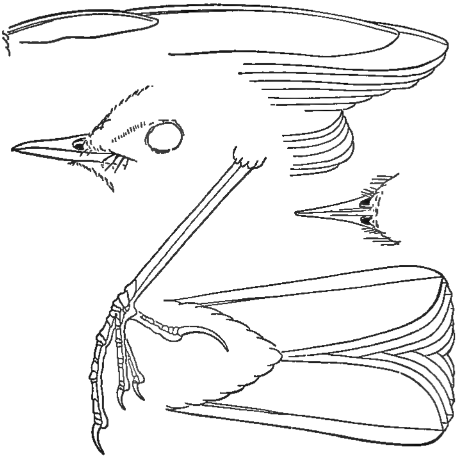


7. **Sitta** carolinensis.

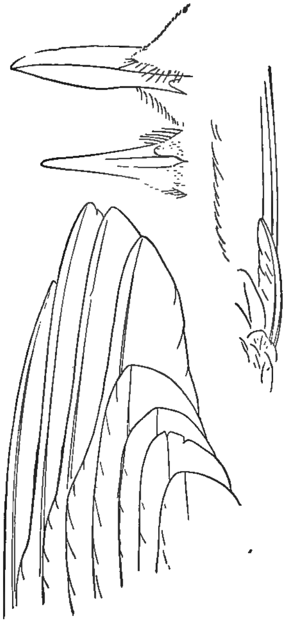
Plate CXXIII.



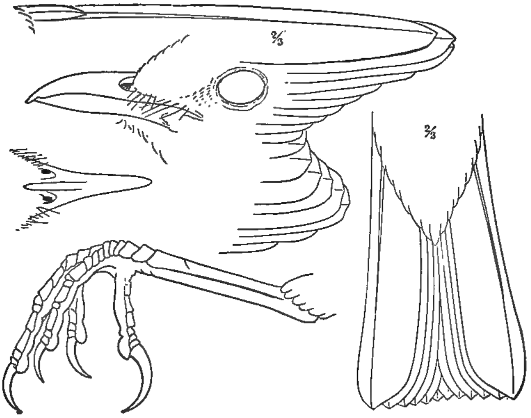
1. **Turdus** (**Hylocichla**) mustelinus.



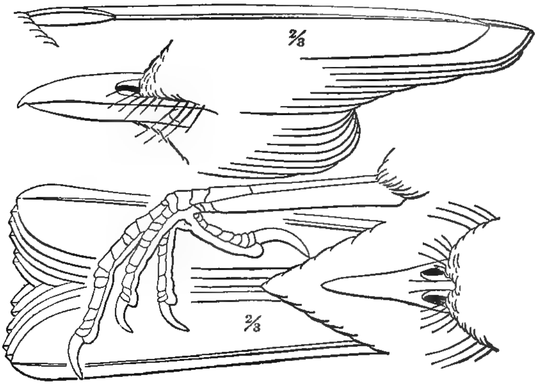
2. **Cyanecula** suecica.



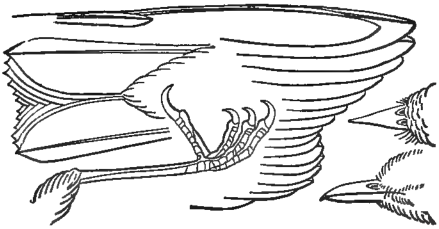
3. **Hesperocichla** nævia.



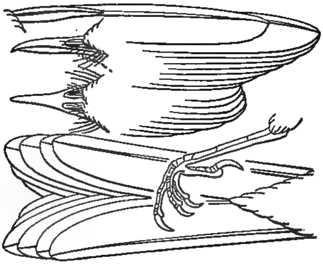
4. **Turdus** iliacus.



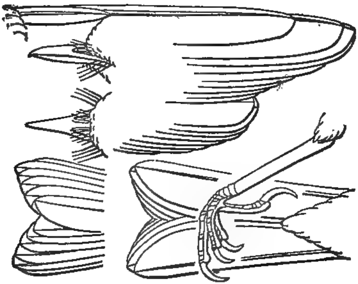
5. **Merula** migratoria.



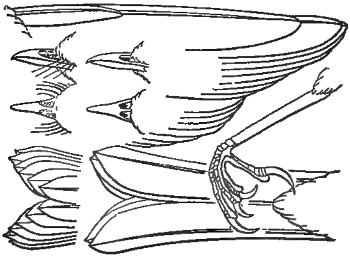
1. **Phyllopseustes** borealis.



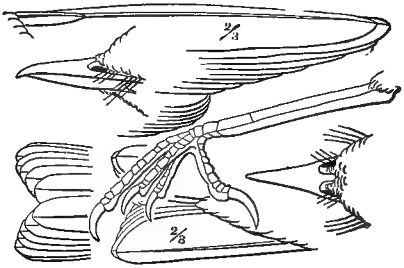
2. **Polioptila** cærulea.



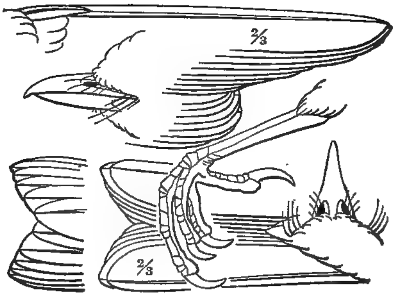
3. Regulus (**Corthylio**) calendula.



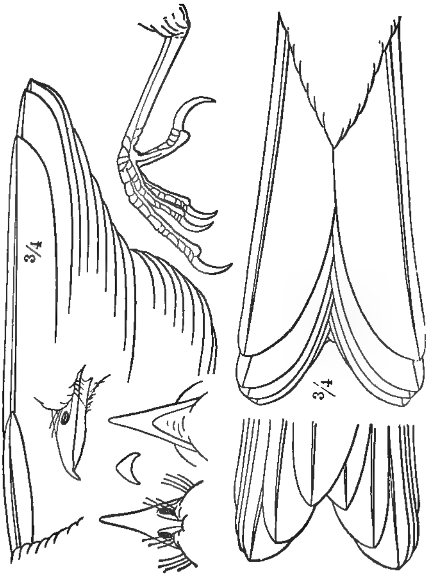
4. **Regulus** satrapa.



5. **Saxicola** œnanthe.



6. **Sialia** sialis.



7. **Myadestes** townsendi.